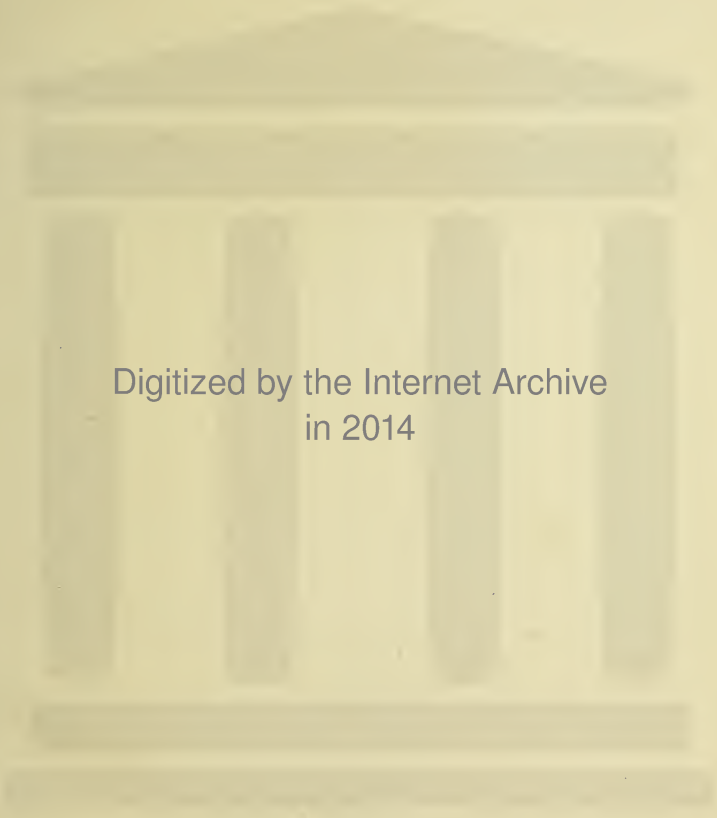
Eighteenth Annual Catalogue of

The Agricultural and Mechanical College Of Texas.

. . . Session of 1893-1894.



SEVENTEENTH ANNUAL CATALOGUE

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE

OF TEXAS.

SESSION 1892-93.

RAILROAD DEPOT, EXPRESS AND MONEY ORDER OFFICE,

COLLEGE STATION, TEXAS.

AUSTIN:
BEN C. JONES & CO., STATE PRINTERS.
1893.

CALENDAR
1893.

JANUARY.

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
..	..	..	..	..	..	..

FEBRUARY.

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	..	..	..	..
..	..	..	..	..	..	..

MARCH.

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
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APRIL.

S	M	T	W	T	F	S
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	..	..	..	..	..	..

MAY.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
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JUNE.

S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	..
..	..	..	..	..	..	..

JULY.

S	M	T	W	T	F	S
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9	10	11	12	13	14	15
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23	24	25	26	27	28	29
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AUGUST.

S	M	T	W	T	F	S
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
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SEPTEMBER.

S	M	T	W	T	F	S
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
..	..	..	..	..	..	..

OCTOBER.

S	M	T	W	T	F	S
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15	16	17	18	19	20	21
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NOVEMBER.

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	..	..
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DECEMBER.

S	M	T	W	T	F	S
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	..	..	..	..	..	..

CALENDAR

1894.

JANUARY.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
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FEBRUARY.

S	M	T	W	T	F	S
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18	19	20	21	22	23	24
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MARCH.

S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
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APRIL.

1	2	3	4	5	6	7
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MAY.

..	..	1	2	3	4	5
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
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JUNE.

..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
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JULY.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
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AUGUST.

..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
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SEPTEMBER.

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9	10	11	12	13	14	15
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23	24	25	26	27	28	29
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OCTOBER.

..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
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NOVEMBER.

..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	..
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DECEMBER.

..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	..	..	..	..	..

CALENDAR.

1893.

Fall Term begins Wednesday, September 6.
Anniversary Austin Society, November 15.
National Holiday, Thanksgiving Day.
Christmas Holiday, December 22 to January 3, 1894.

1894.

Winter term begins Monday, January 3, 1894.
National Holiday, February 22.
Spring term begins March 6.
Anniversary Calliopean Society, March 16.
State Holiday, April 21.
Final Examinations begin May 30.
Commencement Sunday, June 3.
Exhibition of Departments and work of Students, June 4.
Commencement Day, June 5.

BOARD OF DIRECTORS.

The government of this College is vested in a Board of Directors, consisting of five members, appointed by the Governor of the State. They are "selected from different sections of the State, and hold office for six years, or during good behavior, and until their successors are qualified."

HON. A. J. ROSE, President.....Salado
HON. W. R. CAVITT.....Bryan
HON. JOHN E. HOLLINGSWORTH, Commissioner of Insurance, Statistics, History, and Agriculture, *ex-officio*.....Austin
DR. J. D. FIELDS.....Manor
HON. JOHN ADRIANCE.....Columbia

The Board of Directors of the College are also the governing Board of the Experiment Station.

FACULTY AND OTHER OFFICERS.

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Professor of English and History.

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Professor of Mechanical Engineering.

GEORGE W. CURTIS, M. S. A.,
Professor of Agriculture.
(Director of Experiment Station.)

H. H. HARRINGTON, M. S.,
Professor of Chemistry and Mineralogy.
(Chemist to Experiment Station.)

CHARLES PURYEAR, M. A., C. E.,
Professor of Mathematics.

MARK FRANCIS, D. V. M.,
Professor of Veterinary Science.
(Veterinarian to Experiment Station.)

LIEUT. BENJ. C. MORSE, 18TH INFANTRY, U. S. ARMY,
Professor of Military Science and Commandant of Cadets.

F. E. GIESECKE, M. E.,
Professor of Drawing.

J. C. NAGLE, B. Sc., M. A., C. E.,
Professor of Civil Engineering and Physics.

R. H. PRICE, B. S.,
Professor of Horticulture and Botany.
(Horticulturist to Experiment Station.)

T. C. BITTLE, A. M., Ph. D.,
Professor of Languages.

ROBERT F. SMITH,
Associate Professor of Mathematics.

DUNCAN ADRIANCE, M. S.,
Associate Professor of Chemistry.

W. B. PHILPOTT, M. S.,
Associate Professor of English and History.

A. L. BANKS, B. S.,
Adjunct Professor of Mathematics.

P. S. TILSON, M. S.,
Assistant Professor of Chemistry.
(Assistant to Station Chemist.)

A. M. GÜNTHER,
Assistant Professor of Mechanical Engineering.

H. NESS, B. S.,
Assistant Professor of Horticulture and Botany.

J. M. CARSON,
Assistant Professor of Agriculture.
(Assistant to Experiment Station Agriculturist.)

D. W. SPENCE, B. Sc., C. E.
Assistant Professor of Civil Engineering and Physics, and Drawing.

Rev. W. S. RED, A. B.,
Chaplain, Librarian, and Assistant Professor of English.

PROFESSOR PURYEAR,
Secretary of the Faculty.

A. C. GILLESPIE, M. D.,
Surgeon.

JOHN H. CARTER,
Secretary.

E. W. HUTCHINSON, B. C. E.,
Bookkeeper.

B. SBISA,
Steward,

C. A. LEWIS,
Foreman of the Carpenter Shop.

J. B. WATTS,
Stockman.

J. W. CARSON,
Foreman of the Farm.
(Assistant to Director of Experiment Station.)

G. EBERSPACHER,
Florist.

TEXAS AGRICULTURAL EXPERIMENT STATION.

OFFICERS AND STAFF.

GOVERNING BOARD.

BOARD OF DIRECTORS A. & M. COLLEGE.

MAJ. A. J. ROSE, President.....Salado
HON. JOHN E. HOLLINGSWORTH, State Com. Agr.....Austin
HON. W. R. CAVITT.....Bryan
DR. J. D. FIELDS.....Manor
HON. JOHN ADRIANCE.....Columbia

TREASURER.

PRESIDENT L. S. ROSS.....College Station

STATION STAFF.

GEORGE W. CURTIS, M. S. A.....Agriculturist, Director
H. H. HARRINGTON, M. Sc.....Chemist
M. FRANCIS, D. V. M.....Veterinarian
R. H. PRICE, B. S.....Horticulturist
D. ADRIANCE, M. S.....Meteorologist, Asst. Chemist
J. W. CARSON.....Assistant to Director
J. M. CARSON.....Assistant Agriculturist
P. S. TILSON, M. S.....Assistant to Chemist

CATALOGUE OF STUDENTS.

EXPLANATION.

M. S., Master of Science. B. M. E., Bachelor of Mechanical Engineering. B. S. A., Bachelor of Scientific Agriculture. B. C. E., Bachelor of Civil Engineering. M., Mechanical Course. B. S. H., Bachelor of Scientific Horticulture. A., Agricultural Course.

POST-GRADUATES.

Names.	Degree.	Postoffice.
Banks, A. L.	M. S.	College Station
Carson, J. M.	B. S.	College Station
Carson, J. W.	B. S.	College Station
Giesecke, W. E.	M. S.	New Braunfels

FIRST CLASS.

Names.	Course.	Postoffice.
Burgess, R. J.	B. S. A.	Seguin
Hutchinson, O. D.	B. S. A.	Jacksboro
Hawkins, J. W.	B. S. A.	Hallettsville
Kyle, T. M.	B. M. E.	Nursery
Lewis, L. L.	B. S. A.	Rhea's Mill
Mitchell, W. H.	B. C. E.	Youngsport
Metcalfe, W. P.	B. C. E.	Waxahachie
O'Bar, J. H.	B. S. A.	Warrenton
Parsons, B. C.	B. S. H.	Kerrville
Pearson, H. A.	B. C. E.	Baileyville
Perlitz, W. E.	B. C. E.	Schulenburg
Rike, H. M.	B. C. E.	Haskell
Rollins, C. W.	B. C. E.	Merit
Short, J. L.	B. S. A.	Seguin
Weidel, Jos.	B. C. E.	San Antonio
Watson, W. D.	B. S. A.	Bryan
Wilson, W.	B. C. E.	Avalon

SECOND CLASS.

Abbott, E. G.	B. C. E.	Hillsboro
Bringhurst, Sam H.	B. M. E.	College Station
Bruce, Ernest L.	B. C. E.	Mineola
Buchanan, Paul	B. C. E.	Hallettsville
Bittle, W. H.	B. S. A.	College Station
Bocock, J. H.	B. S. A.	Crystal, Va.
Cline, H. A.	B. C. E.	Woodville
Coulter, H. T.	B. S. A.	Bryan
Crow, B.	B. C. E.	Cisco
Caton, S. T.	B. S. A.	Detroit

Names.	Degree.	Postoffice.
Dayton, George W	B. C. E	Valley View
Dinwiddie, Robert L	B. S. A	Austin
Dazey, Will	B. C. E	Fort Worth
Ellis, Fort O	B. C. E	Harrisonburg, La.
Furneaux, John L	B. S. A	Dallas
Fowler, E. R	B. C. E	Palestine
Ferguson, A. M	B. S. H	Salado
Gurley, John	B. S. A	Waco
Gwyn, C. T	B. S. A	Galveston
Gilbert, J	B. S. A	Hornsby
Gunter, S	B. S. A	Sivells Bend
Gunter, H	B. S. A	Sivells Bend
Giddings, E. J	B. C. E	San Antonio
Horne, W. S	B. M. E	Marlin
Hamblen, E. S	B. M. E	Houston
Howell, J. W	B. S. A	Bryan
Houston, F. N	B. C. E	Holland
Huntington, W. C	B. C. E	Shelbyville
Japhet, Gus	B. M. E	Houston
Jahn, F. C	B. S. H	New Braunfels
Jonas, E. C	B. C. E	San Antonio
Kell, Eugene	B. M. E	New Orleans
Lewis, F	B. C. E	Forney
Labatt, T. W	B. C. E	Dallas
Lawrence, R. S	B. S. A	Cameron
Lowday, George S	B. M. E	San Antonio
Luckett, W. M	B. M. E	Bastrop
Marston, C. S., Jr	B. M. E	Columbus
Morrison, H	B. C. E	Cisco
Mitchell, Alva	B. C. E	Campbell
Myers, W. G	B. M. E	Meridian, Miss.
Maynard, M. S	B. C. E	Columbia
McDonald, H. F	B. M. E	McKinney
Massenberg, W. G	B. C. E	Paris
Nixon, R. F	B. S. A	Luling
Oglesby, G. B	B. C. E	Cedar Mills
Orr, W. P	B. M. E	Welborn
Pittuck, A. A	B. S. A	Dallas
Peters, Fred	B. M. E	De Kalb
Pendleton, T. E	B. S. A	Farmersville
Polk, W. A., Jr	B. S. A	Corsicana
Rose, W. F	B. M. E	Schulenberg
Roddy, Stephen R	B. C. E	Roddy
Ross, Frank R	B. S. A	College Station
Ross, J. G	B. C. E	Cold Springs
Reymershoffer, O	B. S. A	Galveston
Rainey, Frank M	B. C. E	Waxahachie
Speer, H	B. C. E	Fort Worth
Staples, C. M	B. C. E	Houston
Stith, R. M	B. S. A	Muscatine, Iowa
Smither, W. C	B. S. A	Huntsville

Names.	Degree.	Postoffice.
Smither, Robert	B. M. E.	Huntsville
Simon, H. W	B. M. E.	Van Raub
Sewell, M. S	B. C. E.	McGregor
Todd, A. M	B. C. E.	Jefferson
Throckmorton, J. W	B. S. A.	McKinney
Tubb, L. W	B. M. E.	Austin
Uhl, C	B. C. E.	Wheatland
Whatley, J. J	B. S. A.	Huntsville

THIRD CLASS.

Alsworth, R. M	M	College Station
Arnim, R. S	M	Hallettsville
Abbott, J. S	M	Hillsboro
Adams, H. C	A	Stafford
Adams, S	M	Bryan
Adams, Henry A	M	San Antonio
Anderson, O. T	M	Fredericksburg
Ayers, Arthur W	M	Troupe
Baumgarten, C	M	Schulenberg
Brown, L. L	A	Groesbeck
Belden, Samuel A., Jr	M	Brownsville
Burleson, R. W	M	San Saba
Bittle, Percy B	M	College Station
Blount, Stephen L	A	San Augustine
Briscoe, B. P	M	San Antonio
Bloor, A. W	A	Manor
Babb, Thomas	M	Wichita Falls
Burgoon, Charles E	M	Estelle
Campbell, Graham	M	New Waverly
Coulter, Walter J	M	Bryan
Clarke, F	A	Bryan
Calvert, James H	A	Kosse
Clarke, Hines	M	Eolian
Carleton, Sidney	M	Tyler
Carroll, Carl F	M	Corsicana
Cochran, W. M	M	Mt. Calm
Duggan, Arthur P	M	San Saba
Duncan, John S	M	New Orleans, La.
Dreyfuss, Ludwig	M	Brownsville
Dechman, Edmund	M	Waxahachie
Daugherty, Benard C	M	Prairie Lea
Dahlich, Ed A	M	Austin
Doom, John R	M	Austin
D'Echaux, Henry	M	Gibson. La.
Evans, John M	M	Corpus Christi
Eberspacher, George	M	College Station
Eddins, M. E	M	Stranger
Freeman, James H	M	Houston
Fitzgerald, Herbert	M	Shiner
Fitzgerald, Archer	M	Shiner
Farmer, Asa	M	Junction City

Names.	Degree.	Postoffice.
Flinn, Ed A	A	Jones Prairie
Givens, John S	M	Corpus Christi
Garrett, Robert	M	Stranger
Gillespie, Allen M	A	Austin
Good, E. N	M	Quanah
Hill, Robert	M	Eastland
Hobson, Alfred B	M	Courtney, I. T.
Houston, W. S	M	Lavernia
Hornberger, J. A	A	Houston
Herndon, Charles	M	Tyler
Harlan, A. L	M	Reagan
Imken, George	A	Walhalla
Jackson, L. G	M	Lone Grove
Jordan, H. P	M	Beaumont
Lacy, Walter G	M	Waco
Levine, J. A	M	Bonham
Lowry, Francis A	M	Bryan
Mayes, Robert H	A	Oakwoods
Mouser, Ed	A	Reinhardt
Meriwether, George B	M	Pearsall
Moore, Wm. H	M	McKinney
Moursund, Andrew F	M	Fredericksburg
Mills, P. P	M	Waco
Martin, Francis L	M	New Orleans, La.
McNeill, J. C	M	Brazoria
McMillan, Marion	M	Boerne
Mayfield, W. N	M	Georgetown
Ouzts, Tom	A	Kosse
Oltorff, C. A	M	Marlin
Perlitz, Charles A	M	Schulenberg
Peden, D. D	M	Houston
Patton, Nathan J	M	Waco
Reagan, T. M	M	Palestine
Reger, J	M	Fort Worth
Rives, Mervin	M	Mission Valley
Ross, A	A	Rossville
Sims, Milton8	M	Bryan
Smither, R. F	M	Huntsville
Stedman, E. D., Jr	A	Aransas Harbor
Stedman, Guy	A	Aransas Harbor
Saunders, O. E	M	Bryan
Smith, A. U	M	Huntsville
Stone, R. A	M	Sealy
Tips, Eugene	M	Austin
Tyson, John G	M	Anson
Titcomb, J. L	M	Gonzales
Teague, George G	M	Longview
Trimble, Elmo	M	Dallas
Vaughn, D. G	M	Seguin
White, George R	M	Brady
Wells, D. D	M	Weatherford

Names.	Degree.	Postoffice.
Webster, Phil F	M	Galveston
Weir, James A	M	San Antonio
Woods, Archie	M	San Saba
Wells, George A	M	Chetopa, Kan.
Watkins, R. C	M	Wills Point
Wakefield, F	A	Frost
Williams, Hilton	M	Albany
Young, A. H	M	Fort Stockton

FOURTH CLASS.

Allison, Rupert S	Longview
Allen, James W., Jr	Wheatland
Breyman, Paul, Jr	Schulenberg
Brown, Horace	La Grange
Bass, Matt J	San Antonio
Bittle, Frank D	College Station
Brock, Fred A	Galveston
Brothers, Benj. A	Slayden
Buchanan, John	Hallettsville
Blount, John F	San Augustine
Ball, Alexander W	Fort McKavitt
Bessling, W. H	Mexia
Bustamente, H	City of Mexico
Bustamente, A	City of Mexico
Brown, M. T	New Orleans, La.
Bruns, Charles	Oquin
Beall, John H	Colorado City
Bocock, Fred	Houston
Coulter, D. P	Aberfoyle
Close, Major	Hempstead
Coleman, Lyman	Berwick, La.
Caswell, Geo. W	Beaumont
Cook, Chas. G	Weimar
Cornelison, W. H	Reagan
Carroll, Marey	Shelbyville
Crowder, Geo. W., Jr	Houston
Davis, J. T., Jr	Mooresville
Davis, Sam	Mooresville
Devlin, Peter	Galveston
Dowell, Willis, Jr	McKinney
Dreibholtz, Frank	Ramos, La.
Dirr, Frank A	Calvert
Dodson, W	Albany
DeStefano, A	Dallas
Donoho, Carl	Plainview
Engle, Otto	Bluff
Eichelberger, William	China Springs
Fitzpatrick, John P	Galveston
Fandal, Joseph	Gibson, La.
Gilmore, Hugh	Burnet
Goldberg, Isaiah L	Jefferson

Names.	Postoffice.
Gross, Abe	Lampasas
Gerstermann, Otto	Houston
Gause, Robert B	Gause
Gladney, Gill	Mt. Pleasant
Hildebrandt, A. M	San Antonio
Hathorn, Arthur V	Gainesville
Haley, W. D	Parker
Harrell, Chas	Galveston
Haak, Henry	Austin
Haas, Harry G	Austin
Johnson, G. A	Kosse
Jackson, A. C	Moulton
Kilner, Arthur	Dallas
Koppe, William	Bryan
Lilienstern, O	Mt. Pleasant
Loper, Charles	Waxahachie
Ligon, Woody L	Fort Worth
Leary. Ross	Milford
Mitchell, Bert	Kyle
Martin, Harry B	Marlin
Mindick, Abraham B	Mexia
Morris, John S	Fredericksburg
Murch, John A	Galveston
Morse, Harry	Col. Springs, Col.
Matthews, William J	Austin
Morgan, James S	San Antonio
Martin, James D	Bryan
Meyer, Theo	Austin
Nooner, Leo	Hempstead
Norton, A. B	Dallas
Neal, J. K	Richmond
Pidcocke, Reginald	Waco
Porter, Roy	Yegua
Post, Allen J	Anderson
Post, Sam J	Anderson
Rosenthal, H. H	Jefferson
Riddle, Henry	Eagle Pass
Rodriguez, Damosa	Porfiro Diaz, Mex.
Reed, Thos. N	Goliad
Sample, O. H. P	Mansfield, La.
Smith, George	Bryan
Sherwood, H. J	Brownsville
Seward, Ingham R	Independence
Steedman, D. A	Steedman
Splane, Peyton	Washington, La.
Strauss, J. C	Dallas
Stasney, Joseph	College Station
Smith, Robert L	Honey Grove
Stiles, James E	Waxahachie
Smith, T. J	Prairie Lea
Stedman, Jerry	Aransas Pass

Names.	Postoffice.
Sanders, William O	Iola
Terry, R. S., Jr	Jefferson
Thompson, Herbert	Dallas
Turnbull, John R	Waco
Ueckert, William	Reinhardt
Vezien, Charles	Algiers, La.
Ward, Robert M	San Saba
Webb, William G	Albany
Wight, Alfred	Roxton
Watts, Arthur	Dallas
Wood, M. K	Graball
White, Leon	Dallas

SUMMARY.

Post graduates	4
First class	17
Second class	69
Third class	100
Fourth class	103
Total	293

It has been the policy of the College authorities to restrict the number of cadets this session as far as possible to two in each room. As there are but one hundred and ten rooms, forty or more applicants were advised during the last term to defer their entrance to the next September session. While this policy lessened the number of matriculates as compared with last session, its wisdom has been fully demonstrated by an increased proficiency and satisfaction in all classes.

BATTALION ORGANIZATION.

B. C. Morse, First Lieutenant Eighteenth Infantry, Commandant of Cadets.

CO. A.	CO. B.	CO. C.	CO. D.

CAPTAINS.

B. C. Parsons,[1]	W. H. Mitchell,[3]	O. D. Hutchinson,[4]	J. H. O'Bar.[2]

Commissioned Staff:
- First Lieutenant and Adjutant, J. W. Hawkins.
- First Lieutenant and Quartermaster, W. Wilson.
- First Lieutenant and Private Secretary, T. M. Kyle.[4]

FIRST LIEUTENANTS.

J. Weidel,[1]	W. E. Perlitz,[3]	J. L. Short,[5]	H. A. Pearson.[2]

SECOND LIEUTENANTS.

L. L. Lewis,[1]	H. M. Rike,[3]	W. D. Watson,[4]	C. W. Rollins.[2]

Non-Commissioned Staff

Sergeant Major,
W. A. BITTLE.
Quartermaster Sergeant,
F. R. ROSS.
Sergeant and Battalion Clerk,
T. E. PENDLETON.[18]
Corporal and Assistant Battalion Clerk,
R. M. WARD.[17]

FIRST SERGEANTS.

F. N. Houston,[1] E. C. Jonas,[4] E. Kell,[3] A. M. Ferguson.[2]

SERGEANTS.

A. M. Todd,[1] B. C. Pittuck,[6] F. Lewis,[2] J. G. Ross,[4]
W. Dazey,[3] W. G. Massenburg,[8] C. Uhl,[10] J. Gilbert,[5]
F. O. Ellis,[7] E. G. Abbott,[11] R. M. Nixon,[14] W. M. Luckett,[12]
F. R. Peters,[9] W. C. Smither,[13] W. G. Myers,[16] W. F. Rose,[17]
A. Mitchell.[15]

CORPORALS.

E. Tips,[1] P. P. Mills,[4] A. U. Smith,[2] G. Imken,[3]
E. D. Stedman, Jr.,[8] J. C. Baumgarten,[6] R. A. Stone,[7] E. A. Dahlich,[5]
M. Rives,[9] A. P. Duggan,[16] F. L. Martin,[10] H. P. Jordan,[11]
G. B. Meriwether,[13] M. McMillan,[18] P. Bittle,[12] H. S. Coulter,[15]
O. T. Anderson,[14] E. Mouser,[20] H. Fitzgerald.[19]

DEGREES AND HONORS

Conferred at Commencement, June, 1892.

DEGREE OF B. S. A.

F. L. Adams, B. V. Ellis, R. Moore, T. E. Moore, D. E. Neathery, E. H. Sauvignet.

DEGREE OF B. M. E.

R. E. Boykin, E. A. Cook, J. F. Floyd, W. E. Giesecke, George Grupe, W. P. Ratchford, F. C. Beyer.

DEGREE OF B. C. E.

E. J. Altgelt, F. L. Buford, W. S. Beesley, C. C. Bailey, W. P. Cottingham, D. S. Cox, D. R. Gurley, H. C. Schumacher, E. Wright, C. W. Buhler, J. A. Ortiz, W. A. Watkins.

GENERAL HONOR MEN BY CLASSES 1891–92.

First Class—Adams, Schumacher, Sauvignet.
Second Class—Baker, Hawkins, Weidel.
Third Class—Kell, Ferguson, Gunter, H.
Fourth Class—Imken, Noton, Jackson.

HONOR MEN IN DEPARTMENTS.

FIRST CLASS.

English—Watkins, Schumacher, Boykin.
Languages—Beesley, Altgelt, Schumacher, Watkins.
Mechanical Engineering—Giesecke, Boykin. Beyer.
Agriculture—Sauvignet, Adams, Ellis, B.
Chemistry—Adams, Sauvignet, Ratchford.
Mathematics—Adams, Schumacher, Beesley.
Veterinary Science—Sauvignet, Adams, Neathery.
Military Science—Adams, Cottingham, Schumacher.
Drawing—Floyd, Giesecke, Cottingham.
Horticulture—Adams, Sauvignet, Ellis.
Civil Engineering—Schumacher, Buhler, Cox.

SECOND CLASS.

English—Lewis, Mitchell, Rollins.
Languages—Perlitz, Weidel, Mitchell, Wilson, W.
Mechanical Engineering—Thornton.
Agriculture—Lewis, Hawkins, Burgess.
Chemistry—Hawkins, Baker, Burgess.
Mathematics—Baker, Rike, Pearson.
Veterinary Science—Mitchell, Hawkins, Parsons.
Drawing—Weidel, Perlitz, Pearson.
Horticulture (B. S. A. Course)—Lewis, Burgess, Hutchinson.
Horticulture (B. S. H. Course)—Parsons.
Civil Engineering (Mechanical Course)—Weidel, Mitchell, Pearson.
Civil Engineering (Agricultural Course)—Lewis, Hawkins, Baker.

THIRD CLASS.

English—Gunter, H., Ferguson, Kell.
Mechanical Engineering—Kell, Peters, Uhl.
Agriculture—Ferguson, Newton, Pittuck.
Mathematics—Gunter, H., Caton, Jones, D.
Veterinary Science—Ferguson, Bittle, P., Ross, F.
Drawing (Agricultural Course)—Cowan, D., Griesenbeck, Pittuck.
Drawing (Mechanical Course)—Jonas, Kell, Labatt.
Horticulture—Ferguson, Jones, D., Lawrence, Bittle, A.
Civil Engineering—Kell, Ferguson, Todd.

FOURTH CLASS.

English—Calvert, Noton, Jackson.
Mechanical Engineering—Imken, Douglass, McGary, E.
Agriculture—Givens, White, Belden, Roth.
Mathematics—Noton, Belden, Calvert.
Drawing—Noton, Baumgarten, Tips.
Horticulture—Imken, Baumgarten, Jackson.

COMMENCEMENT EXERCISES.

June 5, 6 and 7, 1892.

PROGRAMME.

Sunday, June 5.

Commencement sermon by Bishop Alexander Garrett, of Dallas, Texas.

Monday, June 6.

10 a. m. Joint celebration of societies.

3 to 5 p. m. Inspection of departments, including exhibition of stock, apparatus and appliances for instruction, display of products of students' work; students at work according to regular schedule.

5:30 p. m. Infantry drill, preceded by a review of the Battalion by the Governor of the State and Brigadier General Stanley, U. S. A.

8 p. m. Annual reunion of the alumni.

Tuesday, June 7—Commencement Day.

8 to 9 a. m. Target practice by members of the graduating class.

10 a. m. Prayer.

Reading of technical theses by students most distinguished in the several courses of study.

Commencement address by Hon. Horace Chilton.

Delivery of medals.

Valedictory address: W. A. Watkins, Wills Point, Texas (elected by the first class).

Response to the valedictory: O. A. O'Bar, Warrenton, Texas (elected by the second class).

Conferring degrees by the president of the board.

Announcement of the distinguished in the several classes and departments.

Benediction.

5 p. m. Company drill.

6:30 p. m. Graduating dress parade.

GRADUATING CLASS

With Subjects of their Graduating Theses.

F. Adams, Stafford, Texas.....Economic Chemistry on the Farm.
E. J. Altgelt, San Antonio.....Design of King and Queen Post Roof Truss.
C. A. Alexander, Terrell.....Cotton.
C. C. Bailey, Salado.....Lampasas River Bridge, Bell County.
W. S. Beesly, Lancaster.....Design of Pratt Truss.
F. C. Beyer, Marion.....The Modern Machine Shop.

R. E. Boykin, Ozona.....Plans and Specifications of an Electric Light Plant at Ballinger, Texas.
F. L. Buford, Beaumont
C. W. Buhler, Victoria .....Test of East Texas Pines.
E. A. Cook, Sterling.....Equipment and purpose of the Mechanical Department of A. and M. College of Texas.
W. P. Cottingham, Thomaston.....Design of Pratt Truss.
D. W. S. Cox, Giddings.....Topographical Surveying.
B. V. Ellis, Paris.....Forage Plants.
J. F. Floyd, Texarkana.....The Link and Connections.
W. E. Giesecke, New Braunfels.....Governor and Valve, Straight Line Engine.
G. Grupe, Galveston.....Heating of Main Building by Steam.
D. R. Gurley, Waco.....Design of Warren Girder.
T. E. Moore, Gonzales.....Irrigation.
R. Moore, Linden.....Drainage.
D. E. Neathery, Farmersville.....Forestry.
J. A. Ortiz, Laredo.....Foundation.
W. P. Ratchford, Paint Rock.....Metallurgy of Gold and Silver.
E. H. Sauvignet, Laredo.....Liver Flukes.
H. C. Schumacher, La Grange.....Railroad Earthwork.
L. H. Slaughter, Brady.....Improvement of Common Roads.
W. A. Watkins, Wills Point.....Kaufman County Common Roads.
E. Wright, Paris .....Common Roads.

OBJECTS AND PRESENT POLICY.

The act of Congress which established the State Agricultural and Mechanical Colleges defines their objects, but under the act there have been founded as many different schools as there are States. These institutions have presented a variety of educational schemes, which have embraced nearly all gradations from the classical and mathematical college to the manual labor industrial school. In view of this fact, it is proper to state as definitely as possible the interpretation given to the act of Congress by the authorities of this college, and the manner in which they are endeavoring to carry out its provisions.

The general object of this college is to excite and foster in the minds of our people an enthusiastic appreciation of the attractiveness and value of those pursuits by which the material development of the country is advanced.

It proposes to equip boys for their future career by the fullest development of their powers with reference to the wants of life, and acquaint them thoroughly, both theoretically and practically, with the duty, the dignity and the nobility of labor. There is a great field opening in our State for practical technical employment and a growing demand for the services of those fitted for labor in every branch of scientific knowledge,

and we are now compelled to draw upon the skilled labor of other countries to fill the most lucrative, honorable and important positions in every industrial enterprise. In face of this fact, there can be no exaggeration of the value of an institution which will afford the direct advantage of conducting the student from the simplest mechanical principles to the complex order of artistic ingenuity by enabling him to combine principles, construct models and call into activity his ingenuity for designing; while a practical knowledge of the use of tools can be acquired in one-half the time necessary under the ordinary methods of obtaining a trade knowledge as an apprentice, kept at such work only as proves most profitable to the employer.

Agriculture in our country is the admitted basis of public wealth, and we must look to it as the chief source of our prosperity. The machinery of a prosperous agriculture once put in motion brings in its train a vast number of other public enterprises, creating new demands for skilled workmanship, and the skillful hand gives dignity to these pursuits and places a higher estimate upon their value.

Instruction in agriculture and horticulture; how to plant, tend, harvest and store the products of farm and garden; how to care for all the various kinds of stock found on well regulated farms, will inculcate a taste for these pursuits, and induce the young men to seek employment in the country, to the development of a self-reliant manhood, instead of wasting their lives, as is frequently the case, in the over-crowded professional ranks in the cities, by being educated into a fitness for such employments only as require an abstract mental training, and ignoring altogether that which is practical. The young men of the State can acquire at this institution a knowledge that will prepare them to achieve the highest and best results in any station through the reliable factors of education, industry and a proper moral instruction by the application of plain moral precepts to every act of life.

In addition to this, the military feature of the college is of undoubted importance, though probably not fully appreciated. The arguments in its favor are numerous; but far in advance of all others, and what is sufficiently important to at once decide the matter, is its conduciveness to health. The outdoor exercise, the erect position and expanding chest, give the lungs a free play so essential after the cramped position necessary to the school room; the pleasurable excitement accompanying the drill, the strictness of attention required to secure precision and accuracy of movement in performing the evolutions, are highly conducive to bodily health, grace and strength, and perform a very active part also in the inculcation of habits of promptness, regularity and order, and aid materially in preserving a proper discipline.

It is the business of this college to turn the attention of our young

men from the overcrowded "learned professions" to those occupations which have brought abundant wealth and power to other States, and which are beginning now to attract and well repay the services of trained young men in Texas.

These objects are sought to be obtained:

By a thorough course of instruction in all practical and useful branches of knowledge, with continual application of principles to work in the shops, fields, gardens, vineyards, orchards, pastures, dairies and other laboratories.

By relying upon text books as little as possible and leading the students to seek information directly from observation and experiment.

By inculcating the dignity of intelligent labor—banishing the idea that the farmer or mechanic who is worthy of the name need be any less learned than the professional man.

By inducing in the mind of the student an enthusiastic love of nature and the study of natural laws, whereby agricultural and mechanical processes become invested with absorbing interest, and are pursued in a spirit which leads to progress and success.

It will thus be seen that the authorities of this school adhere to the interpretation of the act founding it, which has been given by the author of this act, and which has been adopted by all the successful colleges of similar origin, namely: That this college is not a trade school, designed to take the place of the old apprenticeship system, but an institution where young men may receive broad and liberal training in all those sciences and arts which contribute to useful citizenship in the pursuit of all productive industries.

METHODS AND SCOPE OF INSTRUCTION.

The courses of instruction cover all that is comprised in the curricula of the best institutions of our times, except the ancient languages. The time usually devoted to these is here given to the application of the principles in the fields, shops and laboratories. Mere text book study is regarded as comparatively of little value unless supplemented by intelligent practice in applied science. This practice occupies from six to eight hours per week.

EXPERIMENTAL WORK.

This furnishes the chief means of training students in accordance with this view, and hence a most important subsidiary object of this institution is the discovery and dissemination of all sorts of information with regard to industrial pursuits.

The recent action of Congress in setting aside $15,000 per annum for the establishment and maintenance of agricultural experimental stations in the several States will in a short time place at the disposal of the college the means for efficient experimental work, and offer to students the great advantages of observation and participation in researches which promise important results for the benefit of the whole country. The Agicultural Experimental Station has been established at the college as one of its departments, and students in the agricultural course will hereafter assist in the work of the station.

MANUAL LABOR.

It is taken for granted that every farmer boy can learn at home such things as involve mere manual drudgery. It must therefore be understood that the student will not waste valuable time in labor which is not instructive.

The education here given to young men is not intended to make mere laborers of them in the ordinary sense of the word. A student who graduates here may begin life as a field hand; but it is expected that, by virtue of his superior training, he shall be able speedily to find a promotion and easily fill the highest position of honor to which his ability may lead him.

MILITARY INSTRUCTION.

This is embraced by law in the objects of the college, and will be given such attention as is necessary for an honest compliance with the act of Congress.

MARKS AND EXAMINATIONS.

Records of the standing of each student are kept by the professors of the several departments. This standing is indicated by a system of marks based upon 100 as a maximum, with decimal gradations.

Examinations are held from time to time during the session as special subjects of study may be completed, and at the end of the session upon the general course. The results of these, combined with the daily recitation marks, determine the final standing of the student.

A monthly report is mailed to the parent or guardian of each student, showing his class standing, conduct and health.

GRADUATION.

A diploma of the college, together with the degree corresponding to the course of study pursued, will be conferred upon all students who complete either of the prescribed courses and pass satisfactory examinations on all the branches embraced therein.

Each candidate for graduation is required to submit to the professor in charge of the leading department of his course a graduation thesis; and he may be required to read this or some other essay approved by the Faculty on commencement day as a part of the public exercises.

To every student who completes satisfactorily any one of the optional studies—German, Spanish, Latin—a special diploma on that subject will be granted.

Each student receiving a diploma will be required to pay $5 therefor.

HONORS.

The three students most distinguished for scholarship and deportment in each of the classes, as determined by marks and examinations, are known as honor men, though this rule may be modified if the number of students in any class, or their scholarship, shall not warrant such distinction.

A valedictorian is elected by the members of the graduating class from their own number.

A member of the second class is chosen by his classmates to reply to the valedictorian.

Military promotion is an honor attainable by general good conduct and manly behavior, as well as excellence in studies.

No academic honor will be conferred upon any student who may be deficient in conduct for the session.

REGULAR COURSES OF STUDY.

There are two regular courses of study and practice leading to degrees and extending through four years each. They are identical for the first year, thus giving the student the advantage of elementary training in subjects that are of equal importance to every one, and affording opportunity for intelligent choice between the courses as continued separately through the three succeeding years. In the third year, or second class, there is a still further specialization by which the student may, in the agricultural course, vary his studies with reference to obtaining either of two degrees, that is, Bachelor of Scientific Horticulture (B. S. H.) or Bachelor of Scientific Agriculture (B. S. A.). In the mechanical course a similar specialization is provided for by which the student is given choice between the degrees of Bachelor of Civil Engineering (B. C. E.) and Bachelor of Mechanical Engineering (B. M. E.).

All regular students must pursue either the agricultural or the mechanical course, and there is no course of instruction which is not industrial.

The languages are optional, except as shown in the curricula, and may be studied as subjects outside of the regular courses. There is no charge for any optional study.

In view of the great practical importance of the German and Spanish languages for business purposes in our State, special attention is given to these. A large number of students are of German descent, and speak the language fluently. By association with these, young men may have continual practice in conversation out of the class room as well as in it.

In the curricula of studies the numeral indicates the number of hours per week devoted to the subject.

AGRICULTURAL COURSE.

FIRST YEAR—FOURTH CLASS.

Fall Term—Arithmetic (5); English Grammar, Composition, and Declamation(7); Primary Branches (5). Practice: Carpentry Work (3); Free-hand Drawing and Penmanship (3); Infantry Drill (5).

Winter Term—Arithmetic and Algebra (5); English Grammar, Composition, and Declamation (7); Elementary Agriculture (2); Domestic Animals (2); Primary Branches (5). Practice: Carpentry Work (3); Free-hand Drawing and Penmanship (3).

Spring Term—Algebra (5); History of Texas, Composition, and Declamation (6); Domestic Animals (2); Primary Branches (5). Practice: Carpentry Work (3); Free-hand Drawing and Penmanship (1½); Field and Garden Work (1½); Infantry Drill (3).

SECOND YEAR—THIRD CLASS.

Fall Term—Algebra (5); Dairying (2); Fruit Culture (2); Advanced Grammar, Elements of Rhetoric, Composition, and Declamation (5); Elementary Physics (4). Practice: Horticulture (2); Free-hand Drawing (1½); Infantry Drill (5).

Winter Term—Algebra and Geometry (5); Selection of Dairy Stock (2); Fruit Culture (2); Advanced Grammar, Elements of Rhetoric, United States History, Composition, and Declamation (5); Elementary Physics (3). Practice: Creamery Work (3); Horticulture (1½); Free-hand Drawing (1½).

Spring Term—Geometry (5); Stock Breeding, Lectures (2); United States History, Composition, and Declamation (5); Vegetable Culture (2); Physiology (3); Systematic Botany (2). Practice: Creamery Work (3); Horticulture (1½); Free-hand Drawing (1½); Infantry Drill (3).

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Scientific Agriculture.)

Fall Term—Geometry and Algebra (3); Inorganic Chemistry (4); Veterinary Medicine (2); Entomology (2); Feeding of Live Stock (3); Essentials of English and Essays (2). Practice: Creamery Work and Practical Feeding (3); Entomology (2); Analytical Chemistry (2); Infantry Drill (5).

Winter Term—Inorganic Chemistry (4); Veterinary Medicine (2); Drill Regulations (2); Algebra (3); Feeding of Live Stock (2); Lockwood's English, Outlines of General History (2); Bookkeeping (2). Practice: Cattle Feeding (2); Analytical Chemistry (5).

Spring Term—Trigonometry (3); Organic Chemistry (4); Feeding of Live Stock (2); Outlines of General History and Essays (2); Surveying (3); Bookkeeping (2); Zoölogy (2). Practice: Analytical Chemistry (5); Field Work in Surveying (–); Mechanical Drawing (2); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term—Agricultural Chemistry (5); Geology (2); Farm Drainage (3); Plant Physiology (2); Veterinary Surgery and Anatomy and Materia Medica (3). Practice: Analytical Chemistry (4); Veterinary Practice (2); Agricultural Experiments (2); Infantry Drill (5).

Winter Term—Geology (2); Fertilizers (3); English Literature and Essays (2); Veterinary Surgery and Anatomy and Materia Medica (3); Business Law (2); Lectures on Military Science (1). Practice: Analytical Chemistry (2½); Dissecting (4); Forestry (2).

Spring Term—Farm Management (5); Veterinary Surgery and Anatomy and Obstetrics (3); Forage Plants (2); Injurious Insects (2); Civil Government (2). Practice: Analytical Chemistry (2½); Agricultural Practice (4); Microscopic Work in Veterinary Laboratory (2½); Infantry Drill (3); Graduation Thesis.

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Scientific Horticulture.)

Fall Term—Geometry and Algebra (5); Inorganic Chemistry (4); Entomology (2); Structural Botany (3); Essentials of English and Essays (2); German or Latin (3); Veterinary Medicine (2). Practice: Botany (2½); Analytical Chemistry (2); Infantry Drill (5); Entomology (2).

Winter Term—Algebra (4); Inorganic Chemistry (4); Vegetable Anatomy and Physiology (2); Essentials of English, Outlines of General History and Essays (2); German or Latin (3); Drill Regulations (2); Veterinary Medicine (2). Practice: Botany (2½); Analytical Chemistry (5).

Spring Term—Trigonometry (4); Organic Chemistry (4); Vegetable Physiology (3); Outlines of General History and Essays (2); Surveying (3); German or Latin (3). Practice: Botany (2½); Analytical Chemistry (5); Mechanical Drawing (2); Infantry and Artillery Drill (3); Field Work in Surveying (–).

FOURTH YEAR—FIRST CLASS.

Fall Term—Agricultural Chemistry (5); Fungi and Plant Diseases (2); Horticulture (2); Geology (2); German or Latin (3); Veterinary Surgery (3). Practice: Analytical Chemistry (4); Botany (5); Infantry Drill (3).

Winter Term—Landscape Gardening (1); Fertilizers (3); Geology (2); English Literature and Essays (2); German or Latin (3); Lectures on Military Science (1); Veterinary Surgery (3). Practice: Analytical Chemistry (2½); Horticulture (5).

Spring Term—Plant Variation and Breeding (2); Injurious Insects (2); Forage Plants (2); German or Latin (3); Civil Government (2); Fungi and Plant Diseases (2). Practice: Analytical Chemistry (2½); Horticulture (5); Infantry and Artillery Drill (3); Graduation Thesis.

MECHANICAL COURSE.

FIRST YEAR—FOURTH CLASS.

Fall Term—Arithmetic (5); English Grammar, Composition, and Declamation (7); Primary Branches (5). Practice: Carpentry Work (3); Free-hand Drawing and Penmanship (3); Infantry Drill (5).

Winter Term—Arithmetic and Algebra (5); English Grammar, Composition, and Declamation (7); Elementary Agriculture (2); Domestic Animals (2); Primary Branches (5). Practice: Carpentry Work (3); Free-hand Drawing and Penmanship (3).

Spring Term—Algebra (5); History of Texas, Composition, and Declamation (6); Elementary Agriculture (1); Domestic Animals (2); Primary Branches (5). Practice: Carpentry Work (3); Field and Garden Work (1½); Free-hand Drawing and Penmanship (1½); Infantry Drill (3).

SECOND YEAR—THIRD CLASS.

Fall Term—Algebra (5); M. E. Lectures (2); Advanced Grammar, Elements of Rhetoric, Composition, and Declamation (5); Elementary Physics (4). Practice: Wood-turning, Blacksmithing, Piping, Bench Work in Iron (3); Mechanical Drawing (2); Free-hand Drawing (1); Infantry Drill (5).

Winter Term—Algebra and Geometry (5); M. E. Lectures (2); Advanced Grammar, Elements of Rhetoric, Composition, and Declamation (5); Elementary Physics (3). Practice: Wood-turning, Blacksmithing, Piping, Bench Work in Iron (3); Mechanical Drawing (3).

Spring Term—Geometry (5); M. E. Lectures (2); United States History, Composition, and Declamation (5); Electricity and Magnetism (3). Practice: Wood-turning, Blacksmithing, Piping, Bench Work in Iron (3); Mechanical Drawing (3); Infantry Drill (3).

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Mechanical Engineering.)

Fall Term—Descriptive Geometry (3); Geometry and Algebra (5); Inorganic Chemistry (4); Steam Engine (4); Essentials of English and Essays (2). Practice: Machine Work in Iron, Higher Work in Blacksmithing (5); Mechanical Drawing (2); Infantry Drill (5).

Winter Term—Descriptive Geometry (2); Algebra (4); Inorganic Chemistry (4); Steam Engine (4); Outlines of General History and Essays (2); Drill Regulations (2). Practice: Machine Work in Iron, and Higher Work in Blacksmithing (5); Drawing (2).

Spring Term—Trigonometry (4); Slide Valve (4); Organic Chemistry (4); Outlines of General History and Essays (2); Surveying (3); Machine Design (1). Practice: Machine Work in Iron, and Higher Work in Blacksmithing (5); Drawing (4); Field Practice in Surveying (–); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term—Analytical Geometry, Mechanics (5); Graphics (5); Geology (2); Metallurgy (2); Elements of Machine Designing (2). Practice: Experimental Work in Engineering (5); Metallurgy (2); Mechanical Drawing (4); Infantry Drill (5).

Winter Term—Analytical Geometry and Calculus (5); Mechanism (5); Geology (2); Metallurgy (2); English Literature and Essays (2); Lectures on Military Science (1). Practice: Experimental Work in Engineering (4); Metallurgy (2); Machine Drawing and Designing (4).

Spring Term—Calculus (5); Mechanical Engineering (5); Metallurgy (3); Civil Government (2). Practice: Experimental Work in Engineering (5); Metallurgy (2); Machine Designing and Drawing (2½); Infantry Drill (3). Graduation Thesis.

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Civil Engineering.)

Fall Term.—Descriptive Geometry (3); Geometry and Algebra (5); Inorganic Chemistry (4); Road Making and Maintenance (2); Essentials

of English and Essays (2); German or Spanish (3). Practice: Machine Work in Iron and Higher Work in Blacksmithing (5); Drawing (2); Infantry Drill (5).

Winter Term.—Descriptive Geometry (2); Algebra (4); Inorganic Chemistry (4); Graphic Statics (2); Outlines of General History and Essays (2); German or Spanish (3); Drill Regulations (2). Practice: Machine Work in Iron and Higher Work in Blacksmithing (5); Drawing (2).

Spring Term.—Trigonometry (4); Organic Chemistry (4); Outlines of General History (2); Plain and Topographic Surveying (5); German or Spanish (3). Practice: Machine Work in Iron, Higher Work in Blacksmithing and Field Work in Surveying (5); Mechanical Drawing (4); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term.—Analytical Geometry, Mechanics (5); Railroad Engineering, Use of Solar Compass and Plane Table (5); Sewers and Drains (2); Geology (2); German or Spanish (3); English Literature and Essays (2). Practice: Field Work (5); Mechanical Drawing (5); Infantry Drill (5).

Winter Term.—Analytical Geometry and Calculus (5); Mechanics of Materials, Stresses in Roofs and Bridges (5); Geology (2); German or Spanish (3); English Literature and Essays (2); Lectures on Military Science (1). Practice: Field Work and Use of Testing Machine (4); Mechanical Drawing (5).

Spring Term.—Calculus (5); Roofs and Bridges by Analytical and Graphical Methods, Designing (6); Civil Government (2); German or Spanish (3). Practice: Work with Testing Machine, Designing and Field Work (7½); Mechanical Drawing (2½); Infantry and Artillery Drill (3). Graduation Thesis.

This is the basis of the course of study, subject to such changes as may be deemed advisable at the annual June meeting.

TEXT BOOKS.

FOURTH CLASS.

Arithmetic, *Greenleaf;* Algebra, *Davies;* First Lessons in Agriculture, *Gulley;* Horses, Cattle, Sheep, and Swine, *Curtis; Gray's* School and Field Book of Botany; Elementary Grammar, *Patterson;* History of Texas; Composition, *Quackenbos;* Zoölogy, *Packard.*

THIRD CLASS.

Algebra, *Wells;* Geometry, *Wentworth;* Practical Butter Book, *Willard;* Milch Cows, *Guenon;* Stock Breeding, Lectures; Fruit Culture, Lectures; Fruit Garden, *Barry; Gray's* Manual; Truck Gardening South, *Oemler;* Advanced Grammar, *Patterson;* United States History, *Barnes;* Physiology, *Smith's Comparative;* Physics, *Peck's Ganot;* Electricity, *Deschanel's;* Steam Engine, *Goodeve; Collar* and *Daniell's* Latin Book.

SECOND CLASS.

Geometry, *Wentworth;* Trigonometry, *Wells;* Algebra, *Wells;* Inorganic and Organic Chemistry, *Remsen;* Blowpipe Analysis, *Nason;* Chemical Arithmetic, *Coit;* Steam Engine, *Goodeve; Lockwood's* Lessons; General History, *Myer;* Surveying, *Davies;* Cæsar; German Reader, *Buchheim;* German Grammar, *Sheldon;* Spanish Reader, *Tolon; Knapp's* Reader; Spanish Grammar, *Schele De Vere; Ybarra's* Method; Descriptive Geometry, *Faunce; Beasea's* Essentials of Botany; *Gray's* Structural Botany; *Gray's* Physiological Botany; *Packard's* Entomology; Veterinary Medicine, *Williams;* Manual of Cattle Feeding, *Armsby;* Bookkeeping, *Musselman;* Infantry Tactics, *Upton;* Road-making, *Gillespie;* Graphic Statics, *Merriman.*

FIRST CLASS.

Analytical Geometry, *Peck;* Elementary Mechanics, *Wood;* Practical Calculus, *Peck;* Governmental Class Book, *Young;* English Literature, *Meiklejohn;* Slide Valve, *Halsey;* Geology, *Winchell;* Minerals, Mines, and Mining, *Osborn;* Stadia Surveying, *Winslow;* Field Engineer, *Shunk;* Bridges and Roofs, *Merriman;* Mechanics of Materials, *Merriman;* New Spanish Reader, *Velasquez;* Spanish Grammar, *Schele de Vere;* German Prose, *Boisen;* German Grammar, *Scheldon;* Agricultural Chemistry, Lectures; Fungi and Plant Diseases, Lectures; Forestry, *Hough;* Plant Physiology, *Goodale;* Horticultural Economy and Industries, Lectures; Practical Florist, *Henderson;* Land Drainage, *Klippart;* Talks on Manures, *Harris;* Lectures on Farm Management; Business Law, *Clark;* Astronomy, Lectures; Veterinary Surgery, *Williams;* Veterinary Anatomy, *Chauveau;* Materia Medica, *Bartholow;* Veterinary Obstetrics, *Fleming;* Horse-shoeing, *Fleming;* Military Science, Lectures; United States Army Regulations.

[NOTE.—As the Text Books are subject to change, students are advised not to purchase books before entering the College. The College keeps a supply of books, and furnishes them to students at cost. They must be paid for at time of purchase. Students are given the privilege of returning them on leaving the College, and receiving therefor the amount paid, less the damage done to them. Students will not be required to purchase Drawing Instruments.

SCHEDULE OF RECITATIONS.

In order to show definitely the manner in which the time of students is employed, the following schedule of daily work is appended.

Studies falling in the same hour are in different courses. Instructive work in the shops, fields, garden, laboratories, or creamery is in this schedule designated as "practice." The larger classes are, as necessity may arise, divided into sections which may recite or work in the several departments at the same time under different instructors.

FALL SCHEDULE, 1892.

FIRST CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:50	1	English			English	
8:50- 9:40	2	German	Latin	German	Latin	German.
9:40-10:30	3	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics.
10:30-11:20	4	Metallurgy	Civil Engineering	Metallurgy		Civil Engineering.
10:30-11:20	4	Horticulture	Horticulture	Horticulture	Horticulture	Horticulture.
10:30-11:20	4	Veterinary Surgery		Veterinary Surgery		Veterinary Surgery.
10:30-11:20	4	Spanish	Machine Design	Spanish	Spanish	
11:20-12:10	5	Agriculture	Agriculture	Plant Physiology	Agriculture	Plant Physiology.
11:20-12:10	5	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering.
11:20-12:10	5	Civil Engineering	Civil Engineering	Civil Engineering	Civil Engineering	Civil Engineering.
12:10- 1:00	6	Agricultural Chemistry	Geology	Agricultural Chemistry	Geology	Agricultural Chemistry.
2:00- 4:00		Analytical Chemistry	Botany	Analytical Chemistry	Botany	Forestry.
2:00- 4:00			Agricultural Experiments		Veterinary Laboratory	
2:00- 4:00		M. E. Drawing		M. E. Drawing		Metallurgy Practice.
2:00- 4:30		C. E. Drawing	C. E. Practice	C. E. Drawing	C. E. Practice	
2:00- 4:30			M. E. Practice		M. E. Practice	
5:00- 6:00		Drill	Drill	Drill	Drill	Drill.

SECOND CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:50	1 and 2		Creamery		Creamery	Creamery.
8:50- 9:40	2	English—3	English—2	English—3	English—2	
8:50- 9:40	2	Descriptive Geometry—2	Descriptive Geometry—1	Descriptive Geometry—2	Descriptive Geometry—1	Descriptive Geometry—2.
9:40-10:30	3	Entomology—A	Veterinary Medicine	Entomology—B	Veterinary Medicine	Entomology—A. and B.
9:40-10:30	3		German		German	
9:40-10:30	3	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Descriptive Geometry—1.
10:30-11:20	4	Stock Feeding		Stock Feeding		Stock Feeding.
10:30-11:20	4	Botany		Botany		Botany.
10:30-11:20	4	Civil Engineering		Civil Engineering		
10:30-11:20	4	Mathematics—1	Mathemaiics—1	Mathematics—1	Mathematics—1	Mathematics—1.
11:20-12:10	5			English—1		English—1.
11:20-12:10	5	Chemistry—2	Chemistry—2	Chemistry—2	Chemistry—2	Spanish.
11:20-12:10	5	Mathematics—3	Mathematics—3	Mathematics—3	Mathematics—3	Mathematics—3.
12:10- 1:00	6	Chemistry—1 and 3	Chemistry—1 and 3	Chemistry—1 and 3	Chemistry—1 and 3	
12:10- 1:00	6	Mathematics—2	Mathematics—2	Mathematics—2	Mathematics—2	Mathematics—2.
2:00- 2:50	7	Latin		Latin		
2:50- 3:40	8	Spanish		Spanish		
2:00- 4:00				Drawing—1	Entomology	Drawing—2.
2:00- 4:30			M. E. Practice		M. E. Practice	Botany.
2:00- 4:30			Chemical Practice			
4:00- 6:00			Creamery		Creamery	Creamery.
5:00- 6:00		Drill	Drill	Drill	Drill	Drill.

FALL SCHEDULE, 1892.

THIRD CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 9:40	1 and 2	Shop Practice	Shop Practice—D.		Shop Practice—S.	Shop Practice—D.
8:00- 9:40	1 and 2	Drawing—D.	Drawing—S.		Drawing—D.	Drawing—S.
8:00- 9:40	1 and 2		Horticultural Practice		Horticultural Practice	
9:40-10:30	3	English—1	English—1	English—1	English—1	English—1.
9:40-10:30	3	Mathematics—2 and 4	Mathematics—2 and 4	Mathematics—2 and 4	Mathematics—2 and 4	Mathematics—2 and 4.
9:40-10:30	3	Physics—3	Physics—3	Physics—3		Physics—3.
10:30-11:20	4		Mechanical Engineering—D.	Mechanical Eng.—S.	Mechanical Eng.—D.	Mechanical Eng.—S.
11:20-12:10	5	Fruit Culture		Dairying	Fruit Culture	Dairying.
11:20-12:10	5	Mathematics—3	Mathematics— 3.	Mathematics—3	Mathematics—3	Mathematics—3.
12:10- 1:00	5 and 6	English—3	English—3	English—3	English—3	English—3.
12:10- 1:00	6	Physics—2	Physics—2	Physics—2	Physics—4.	Physics—2.
12:10- 1:00	6	Mathematics—1	Mathematics—1	Mathematics—1	Mathematics—1	Mathematics—1.
2:00- 2:50	7	English—2 and 4	English—2 and 4	English—2 and 4	English—2 and 4	English—2 and 4.
2:00- 2:50	7	Physics—1		Physics—1		Physics—1.
2:50- 3:40	8	Physics—4	Free-Hand Drawing	Physics—4		Physics—4.
					Physics—1	
5:00- 6:00		Drill	Drill	Drill	Drill	Drill.

FOURTH CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:50	1	English—1	English—2	English—3	English—1	English—2.
8:50- 9:40	2	Mathematics—1	Mathematics—1 and 2	Mathematics—1 and 2	Mathematics—1 and 2	Mathematics—1 and 2.
9:40-10:30	3	English—1	English—1	English—1	English—1	English—1.
	3	Domestic Animals—3 and 4	Domestic Animals—3 and 4	Domestic Animals—3 and 4	Domestic Animals—2 and 3	Domestic Animals—3 and 4.
10:30-11:20	4	English—2 and 3	English—2 and 3	English—2 and 3	English—2 and 3	English—2 and 3.
11:20- 1:00	5 and 6	Shop Practice—S.	Shop Practice—D.	Shop Practice—S.	Shop Practice—D.	
		Drawing—D.	Drawing—S.	Drawing—D.	Drawing—S.	
2:00- 2:50	7	Domestic Animals—1 and 2	Domestic Animals—1 and 2	Domestic Animals—1 and 2	Domestic Animals—1 and 2	Domestic Animals—1 and 2.
2:50- 3:40	8	Mathematics—3	Mathematics—3	Mathematics—3	Mathematics—3	Mathematics—3.
5:00- 6:00		Drill	Drill	Drill	Drill	Drill.

POST-GRADUATE COURSES.

The Post-Graduate Degree of M. S. (Master of Science) will be given to those who have pursued the Post-Graduate studies for two years, and have passed satisfactory examinations thereon and submitted an approved thesis.

It is required for admission to study for this degree that the candidate be a graduate in one of the courses, or pass satisfactory examinations upon subjects embraced in them.

Students for this degree are under the general regulations of the College, but are not subjected to military discipline; they may, however, be required to assist in keeping order in the barracks.

A student desiring to enter for this degree must select his course of study from the following prescribed subjects. This selection must be submitted to and approved by the Faculty, and no change can be made without approval of Faculty.

The Faculty will require a sufficient number of subjects to give the students full employment.

AGRICULTURE.

Farm economy, drainage and irrigation; studies in selection and cross-breeding to improve farm crops and forage plants; practical work in the management of farm and stock; original investigation by the student in any branch of agriculture.

MECHANICAL ENGINEERING.

Continuation of fourth year's work, and Steam Engine (by Rankine) begun in first year. Experimental work in the machine shop; Steam Engine (by Rankine) completed; special subjects and original designing in second year. Practice same as in fourth year.

HORTICULTURE.

Propagation and improvement of cultivated plants; fertilization and cross-fertilization; forestry; pomology; management of glass houses; entomology continued, including anatomy of types; laboratory work on classification; special study of insecticides and management of an apiary; experimental work throughout the two years in hybridizing, nursery work and management, and commercial gardening; assisting in other experimental work.

BOTANY.

Grasses continued, reading, laboratory work and field experiments; mycology, thesis on special work, and original research with the microscope; microscopic work in plant history, including micro-chemistry and mounting; development of mosses and ferns; drawings and readings; collections of one hundred plant specimens; animals and plants under domestication; economic botany.

EXPERIMENTAL AGRICULTURE.

Review of Laws and Gilbert's work at Rothamstead; review of French and German experiments; review of experimental work in the United States; practice in experimental feeding; practice in field work.

CIVIL ENGINEERING.

Advanced work is offered in the following subjects: Hydrographic surveying; hydraulic and water supply engineering; masonry construction; stereotomy; geodesy; least squares; strains in draw bridges and other continuous structures; theory of the strength of materials; experimental work with testing machines; designing; detail and shop drawings; thesis.

PHYSICS.

Analytic mechanics and hydro-mechanics; advanced work in sound, heat, light and electricity; work in the laboratory.

MATHEMATICS.

Advanced Analytical Geometry; Differential and Integral Calculus; Analytical Mechanics; Differential Equations.

CHEMISTRY.

Qualitative analysis, toxicology, and technology; theoretical and organic chemistry; agricultural chemistry; standard reference and text books; current chemical literature. Final thesis on original work.

GEOLOGY AND MINERALOGY.

Volumetric analysis, assaying, metallurgy, examination of slags and fluxes and furnace products; instruction and practical work in economic geology; prospecting; examination and separation of ores.

The work in this department will be largely practical, but standard books and current literature will be constantly used.

MODERN LANGUAGES.

The course in this department will embrace such studies and exercises as will lead to a thorough and practical knowledge of either German or Spanish language and literature.

ENGLISH.

Advanced studies in English.

DRAWING.

Descriptive Geometry, Shades and Shadows, *Church.*

Such advanced work in drawing as may be needed by the student for his special course.

INFORMATION CONCERNING ADMISSION.

REQUISITES OF ADMISSION.

To enter the College, an applicant must have attained his fifteenth year, or otherwise must have attained a degree of physical and mental advancement corresponding to that age. He must be free from contagious or infectious disease, or any deformity that would unfit him for the performance of his duties as a student of the College. He may be required to furnish evidence that he has not been dismissed from another institution of learning, and that his moral character is good.

The mental attainments necessary for entering upon the courses of study comprise a fair knowledge of arithmetic as far as proportion, of descriptive geography, and of elementary English grammar and composition.

The reputation of this College for good discipline has caused parents in some instances to apply for admission for boys that had proved unmanageable and thoroughly vicious at other institutions. It is desired that such applications be not in future presented.

The proper time—that is, the BEST time—for entering the classes is at the beginning of the scholastic year. Students are admitted, however, at any time of the year, but if not fully prepared in the previous work of the class, they are then obliged to make up their deficiencies by *extra efforts* during the term.

MATRICULATION.

Upon arrival at the College young men intending to enter will report as soon as possible to the President of the College. From him they will go to the several professors for enrollment in classes, and to the Commandant for assignment to company and quarters.

Upon entering the College every student will be required to state upon honor that he has no firearms or other deadly weapons in his possession, or if he has such to deposit them with the President.

As there is no hotel at the station, new students or other strangers would be saved much embarrassment by arriving on a day train.

Persons stopping in Bryan can readily obtain conveyance by carriage to the College, and there is a telephone by which messages can be sent.

Prepaid telegraphic dispatches are forwarded to the College by telephone.

EXPENSES FOR SESSION OF NINE MONTHS.

Trust fund	$5 00
Incidental fee	10 00
Physician's fee	5 00
Maintenance, Fall Term	50 00
Maintenance, Winter Term	35 00
Maintenance, Spring Term	40 00
Total	$145 00

The trust fund is to pay for property damaged or destroyed, and will be refunded if there is no charge of this kind against the student.

Incidental and physician's fees are payable on entrance, whether at the beginning of or during the session, and can not be refunded.

Maintenance includes board, fuel, washing, lights, room rent, bedsteads, mattresses, pillows, tables, washstands, chairs, wardrobes, buckets, basins and slop cans, all of which the College furnishes.

Each student is required to bring with him and keep on hand a sufficient supply of bed clothing, towels, etc., and underclothing sufficient for one year's wear.

Students are required to take their meals at the Steward's Hall.

Payment for each term must be made in advance, but a student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for the term and having paid for that term or the balance of it, as required by the resolution of the Board of Directors, shall forfeit all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness.

If on any account the prompt payment of the dues should be delayed, the President will mail to the parent or guardian of the student the following notice:

NOTICE TO PARENTS AND GUARDIANS.

"Your attention is respectfully directed to the following resolution, passed by the Board of Directors of the Agricultural and Mechanical College of Texas:

'*Resolved*, That it shall be the duty of the Treasurer to notify parents and guardians ten days after the date upon which a term payment is due that if same is not paid within twenty days thereafter (thirty days from time the payment was due), the student so in arrears will be dismissed.

'Payment due.....18.. Notice sent.....18..

'Limit expires.....18..'

"All communications in reference to accounts of students should be addressed to the President of the College."

UNIFORMS, BOOKS AND STATIONERY.

A neat uniform of cadet gray cloth is furnished here, at a cost of from $15.50 to $18.

These uniforms are made by contract, and students are required to purchase from the contract tailor in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons. The contract suits are carefully inspected by the Commandant of Cadets, and thus the full value of money expended for them is secured.

There is no charge for tuition, and through the agency of funds derived under a law of Congress text books have been made practically free. Stationery may be obtained here.

BEGINNING OF THE SESSION.

The seventeenth annual session will open Wednesday, September 6, 1893, and will close on Tuesday, June 5, 1894.

Students should not arrive at the College earlier than Monday, September 4.

STUDENT LABOR.

The Board of Directors have asked of the Legislature a Student Labor Fund to assist worthy young men seeking the advantages of the College, and this will probably be granted.

MISCELLANEOUS.

LOCATION.

The College is situated at College Station, in the county of Brazos, five miles south of Bryan and ninety-five miles northwest of Houston. The Houston and Texas Central Railroad runs through the grounds, daily trains stopping at the station, about 800 yards from the main building.

POSTOFFICE.

This is College Station, not Bryan. It is important that correspondents should observe this, since letters are often delayed by going to the latter place. College Station is a money order office, and there is an express office at this place.

MAIN BUILDING.

The main building stands on the highest point of the grounds. It is four stories high, made of brick, with mansard roof and towers. The rooms are all of high pitch and well ventilated. There are forty-five rooms in the building. On the fourth story nearly half the space is occupied by the large room assigned to the drawing department. Two society halls, the armory, the mechanical section room, and two small rooms are also on this floor. On the third floor are the section rooms of the departments of English, languages, and horticulture and botany, the library and reading room, and eight rooms occupied by officers of the College. On the second floor are the President's office, the business office, the book store, the chemical laboratory and section room, the museum, the agricultural section room, English section room, the office of the Director of the Agricultural Experiment Station, and the janitor's room. On the first floor are chemical private laboratory, furnace room, section room, and instrument room of the department of civil engineering and physics, store room, dark room, mathematical section room, guard room, commandant's office, and section room and laboratory of the department of veterinary science. There are broad halls running through each story at right angles to each other, and two sets of stairways, one in the middle, the other at the end of the building.

SHOPS.

North of the Main Building are found those buildings occupied by the Department of Mechanical Engineering, which consist practically of one

building, although made in two distinct parts. First, the one containing the carpenter shop, class rooms and model room; second, that containing the machine and blacksmith shops and the boiler room. The carpenter shop is fitted up with benches and tools for the accommodation of sixty pupils, while above it, on the second floor, are two class rooms and a model and designing room. Back of this are the other shops mentioned in a building of one story. Power for the machine shop is furnished by an eighteen horse power Straight Line Engine, and that for the blacksmith shop by a five horse power engine, which was built and set up by the graduating class of 1888. The machine shop is equipped with sixteen wood turning lathes, circular band and jig saws, emery wheel stand, six engine lathes, planer, shaper, drill and milling machine. The blacksmith shop has thirteen forges with necessary tools, power blast and exhaust fan.

PFEUFFER HALL.

This new building, erected in 1887, is for a dormitory, and has capacity to accommodate seventy-five students. It is named in honor of Hon. George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and has capacity to accommodate seventy-five students.

ROSS HALL

Is another and more commodious dormitory, three stories high, with forty-one rooms, erected in 1892, and has accommodations for eighty-two students.

HOSPITAL.

A large and comfortable building has been erected as a hospital and surgeon's residence.

The surgeon will give his attention to all students without charge other than the regular medical fee of five dollars paid by each student upon entrance.

CREAMERY.

The creamery has been in successful operation since 1888. It is in a substantial building, supplied with a complete outfit of the latest improved apparatus for making butter. The machinery is driven by a six-horse power engine. To this there has been recently added a well made building, supplied with all necessary apparatus for manufacture of cheese. Practice in both butter and cheese making forms part of the agricultural course.

ASSEMBLY HALL.

This building has been completed and furnished with neat opera chairs. It is a two-story brick building, stuccoed with Portland cement; has main floor and gallery. It is an ornament to the grounds.

FARM BUILDINGS.

These are situated several hundred yards in the rear of the main building. They consist of two large barns, a milking shed, and a piggery. One of the barns is new, and is fitted with stalls for the thoroughbred cattle, and the storage rooms for implements and food. These buildings are supplied with water from a large tank, which is kept filled by a wind mill.

There have recently been erected three large silos in connection with the Agricultural Experiment Station, and students will have the advantage of practical instruction in the construction of silos and the best methods of preparing ensilage.

PERMANENT FUND.

In November, 1871, the Legislature formally accepted from Congress the gift of one hundred and eighty thousand acres of public land for the endowment of an agricultural and mechanical college. This land was sold for $174,000, which sum was invested in 7 per cent State bonds. As under the Act of Congress neither the principal nor interest of this money could be used for other purposes than the payment of officers' salaries, at the time of the opening of the college there was an addition to the fund from accumulated interest of $35,000. This was invested in 6 per cent bonds of the State, thus furnishing an annual income of $14,280.

LANDS.

The county of Brazos donated to the college two thousand four hundred and sixteen acres of land lying on each side of the Houston and Texas Central Railroad, five miles from Bryan and ninety-five from Houston.

GROUNDS, FARM AND STOCK.

The farm, garden, orchard, barnyards and campus are included in the inclosures to the east of the station. The farm comprises about two hundred acres. This is devoted solely to experimental culture and the production of forage for stock. The orchard of eighty acres contains a large variety of young fruit trees more or less adapted to this climate. The

garden affords experimental work to students and furnishes an abundance of vegetables to the mess hall. A young vineyard has been started; many of the vines are already bearing well. Back of these are the piggery, calf lots, barns and pastures of about four hundred acres.

The College now owns registered cattle, Dutch, Frisians, Galloways, and Jerseys, besides a number of high grade Shorthorns and common cows for the present milk supply. The swine include Essex and Berkshires. On the west side of the railroad two pastures of eight hundred acres each have been enclosed.

APPARATUS.

All departments of instruction are well supplied with implements and instruments of the latest and best forms. The agricultural department is equipped with hand tools, machinery, and mules for farm work. The machine shops are well furnished with wood and metal working machinery and tools. The chemical and physical laboratories have recently received important accessions of apparatus.

The department of civil engineering is supplied with a full set of surveying and engineering instruments.

MILITARY ORGANIZATION AND DISCIPLINE.

For the purpose of maintaining good order and discipline, as well as for the proper execution of the law of Congress requiring military instruction of the students, they are organized into a battalion of two or more companies. The battalion is under the immediate command of the Commandant. The officers, commissioned and non-commissioned, are students taken for the most part from the first and second classes. They are appointed by the President of the College upon the recommendation of the Commandant, and their appointment and rank is made to depend upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The President, by College regulations, is responsible for the government and management of the College, and supervises and controls all the departments, collegiate and otherwise.

The Commandant has immediate command of the corps of students, and is responsible for the military organization. All permits for privileges, all excuses and explanations for delinquencies must be submitted through him.

GENERAL REGULATIONS.

It is understood that every student upon entering the College pledges himself to an honest effort to observe the regulations and sustain the authorities in the maintenance of discipline.

The strictest attention to study, and the most exact punctuality in attendance on recitations and other duties, will be made the condition of every student's continuance at the College; and any student who without authority absents himself from recitation or any other duty, deserts his class, or refuses to attend when warned, shall be dismissed, or less severely punished, at the discretion of the Faculty.

Students are forbidden to enter into combinations under any pretext whatever. One who shall begin, excite, cause or join in any boisterous or riotous conduct, or become a party to any agreement to avoid or violate any regulation, to hold no intercourse with a comrade, or to do any act to the prejudice of good order and military discipline, shall be dismissed.

If any student shall be guilty of hazing or of inciting others thereto, he shall be expelled, and it shall be the duty of the President to place opposite his name in the Catalogue the words, "expelled for hazing."

Students are prohibited, under the penalty of dismissal, from having in their possession ammunition, weapons, or arms not issued for the performance of military duty; nor shall these be retained loaded in quarters under any pretext.

A student who shall drink, or bring, or cause to be brought within the cadets' limits, or have in his room, or otherwise in his possession, any fermented or intoxicating liquor, or fruits or viands preserved in intoxicating liquor, shall be dismissed or otherwise punished, at the discretion of the Faculty.

No student shall have in his possession or play at cards or games of chance, engage in a raffle, or in any manner wager money or other things, on penalty of dismission.

Permission to attend private parties or places of public amusement will not be granted during the term.

No cadet can be granted a leave of absence during a term without an urgent necessity.

No student is allowed to leave the College during the session without permission of the President of the College, on application through the Commandant.

A student who shall cut, mark, or otherwise injure or deface the buildings, furniture, or appurtenances, the trees, shrubbery, greensward, grounds, fences, stables, or outhouses, or who shall lose, injure, destroy, or improperly dispose of the arms, accoutrements or other property of

the College, shall make good all damage, and be dismissed or otherwise punished according to the nature of the offense.

When the responsibility for the destruction of State property can not be fixed upon any one, the amount of the damage will be assessed against the occupants of a room or division of the entire body of the students, as the case may require.

Students receive the admonition and counsel of the President before being subjected to any penalty except in the case of flagrant offenses. Those who are habitually neglectful of their duties, or who do not regularly attend their classes, will be required to withdraw from the College.

To each recorded delinquency a number of from one to ten, proportional to the degree of the offense, in a moral and military view, is assigned to express demerit.

Any student receiving demerits as follows shall be declared deficient in conduct, and subject to dismissal: In the first class, one hundred in a session, or thirty-four in a term; in the second class, one hundred and fifty in a session, or fifty in a term; in the third class, two hundred in a session, or sixty-six in a term; in the fourth class, two hundred and fifty in a session, or eighty-four in a term.

TO PARENTS AND GUARDIANS.

The necessity for uninterrupted attention to their studies on the part of students can not be too strongly urged. It is impossible for a young man to become interested in his work here if he is permitted to leave the College whenever any special amusement is advertised in our neighboring towns and cities. It is therefore respectfully asked that those who send their sons or wards here do not, except in the most pressing emergencies, request permission for them to leave their studies for any purpose whatever.

Whenever the parent or guardian shall leave the application for special permits to the discretion of the son or ward, the College authorities will judge of the propriety of granting such permits.

HYGIENE.

The buildings of the College stand upon the crest of a "divide," from which there is sufficient slope to carry off all drainage.

The soil is sandy, and mud and water disappear within a few hours after rain. An extensive open prairie surrounds the College on all sides. There is a constant breeze—usually very strong. The water used by students is obtained from cisterns, supplied from high, clean roofs.

The rooms of the students are inspected at least twice a day, and are required to be kept neat and well ventilated.

There is in the vicinity of the College apparently nothing to produce

malarial sickness, and as a matter of fact there is very little of it here. All serious sickness has been in the form of pneumonia and measles, which do not depend on local causes.

The food served in the mess hall is admitted by all to be abundant, palatable, and wholesome. It is therefore very desirable that parents should refrain from sending boxes of delicacies to their sons. The practice of eating from these between meals is undoubtedly very injurious to the health of the young men, and the surgeon has traced more sickness and consequent loss of time to this one cause than any other.

The drill, farm, and shop practice and athletic sports furnish abundant and wholesome exercise for the students.

RELIGIOUS AND MORAL CULTURE.

Every Sunday there will be service in the chapel, and all students must be present unless excused by special request of parents or guardians. The faculty will try by all means within their power to protect and develop good morals in those committed to their charge.

The situation of the College is peculiarly favorable for the preservation of the morals of the students. The nearest town is distant five miles, and it is almost impossible for any student to go to Bryan, even for a short time, without his absence becoming known to the authorities. All the temptations that beset young men in cities are entirely absent here. No student is ever permitted to visit Bryan at night except by request of his parent or guardian.

An active branch of the Young Mens' Christian Association has been established, with a present membership of 185. In conjunction with their Christian work these young men, with the liberal aid of the professors, cadets, citizens and the College, erected a gymnasium hall which has been fairly well furnished with the ordinary paraphernalia requisite for the reasonable exercise of gymnastic feats. This has been hailed by the boys as a great boon, and affords the means of recreation immeasurably enjoyed.

LITERARY SOCIETIES.

There are two literary societies at the College—the Austin and the Calliopean. They meet weekly in their respective halls for practice in debate, literary composition, and declamation. Public debates are held frequently during the session, and speakers are invited to deliver addresses.

MUSEUM.

A room in the main building has been fitted up for a museum. The closets and show cases are well furnished with specimens of many varieties.

Minerals from all parts of the State will be received and their composition determined by chemical analysis.

LIBRARY AND READING ROOM.

A valuable library and reading room have been provided for the use of the students, and additions will be annually made.

The library now comprises standard works of history, biography, agriculture, mechanics, engineering, mathematics, natural science, law, and political economy, mental and moral philosophy, poetry, general literature, and reference.

Gifts of books and magazines will be thankfully received. Back numbers of literary and scientific periodicals will be especially useful in completing files.

LIST OF PERIODICALS AND PAPERS IN THE READING ROOM.

The following papers have been contributed to the reading room by the publishers, excepting those marked with an asterisk (*):

AGRICULTURAL.

Acker und Gartenbau Zeitung, Milwaukee, Wis.
Agricultural Epitomist, Indianapolis.
*American Agriculturist, New York.
American Garden, New York.
*Country Gentleman, Albany, N. Y.
*Dixie, Atlanta, Ga.
Farm Journal, Philadelphia.
Farm, Field and Fireside, Chicago, Ill.
Farm and Fireside, Springfield, Ohio.
Farm, Field and Stockman, Chicago.
Farm and Home, Springfield, Mass.
Farmer's Call, Quincy, Ill.
Farmer's Review, Chicago.
*Garden and Forest, New York.
Homestead, Des Moines, Iowa.
Industrialist, Manhattan, Kan.
Kansas Farmer, Topeka, Kan.
Massachusetts Ploughman, Boston, Mass.
Mirror and Farmer, Manchester, N. H.
Northwestern Agriculturist, Minneapolis, Minn.
Orange Judd Farmer, Chicago, Ill.
Our Grange Homes, Boston, Mass.
*Pacific Rural, San Francisco.
Purdy's Fruit Recorder, Palmyra, N. Y.
Rural New Yorker, New York.
*Southern Cultivator, Atlanta, Ga.
Southern Mercury, Dallas, Texas.
Southern Planter, Richmond, Va.
Texas Farm and Ranch, Dallas, Texas.

Texas Farmer, Dallas, Texas.
Wisconsin Agriculturist, Racine, Wis.
Western Farmer, Sioux City, Iowa.

STOCK.

*Breeder's Gazette, Chicago.
*Horseman, Chicago.
Live Stock Indicator, Kansas City.
National Stockman and Farmer, Pittsburg.
Stockman's Weekly Review, Chicago, Ill.
Texas Live Stock Journal, Fort Worth.
Texas Stockman and Farmer, San Antonio.

DAIRY.

American Creamery, Chicago, Ill.
*American Dairyman, New York.
Dairy Column, Chicago.
Dairy World, Chicago.
Hoard's Dairyman, Fort Akinson, Wis.
Jersey Bulletin, Indianapolis.

SHEEP AND HOGS.

American Sheep Breeder, Chicago.
American Swineherd, Chicago.

MECHANICAL.

*Age of Steel, St. Louis, Mo.
*Architecture and Builder, New York.
*American Machinist, New York.
Bulletin Des Seances De La Society D'Agriculture, Paris.
Engineering Mechanics, Philadelphia, Pa.
*Iron Age, New York.
Manufacturer and Builder, New York.
Mechanical News, New York.
*Railroad Gazette, New York.

SCIENTIFIC.

American Meteorological Journal, Boston, Mass.
*American Journal of Science, New Haven, Conn.
American Geologist, Minneapolis, Minn.
American Chemical Journal, Baltimore, Md.
American Naturalist, Philadelphia.
Botanical Gazette, Crawfordsville, Ind.
Drainage Journal, Indianapolis, Ind.
Druggist's Circular, New York.
*Electrical World, New York.
*Engineering News, New York.
*Engineering and Mining Journal, New York.
Journal of Analytical and Applied Chemistry, Easton, Pa.
Journal of Comp. Medicine and Surgery, New York.
*Nature, New York.
*Popular Science Monthly, Boston, Mass.
Popular Science News, Boston, Mass.

*Science, New York.
*Scientific American and Supplement, New York.
School of Mines Quarterly. Columbia College, New York.
Veterinary Journal, London, England.
Western Penman, Cedar Rapids, Iowa.

LITERARY.

*Belford's Monthly, Chicago.
*Fortnightly Review, London, England.
*Forum, New York.
*Literary Digest, New York.
*Nation, New York.
Nineteenth Century, London, England.
*North American Review, New York.
*Public Opinion, New York.
Review of Reviews, New York.
*Scribner's Magazine, New York.
*The Century, New York.

RELIGIOUS.

Christian Observer, Louisville, Ky.
Missionary Review, New York.
Southwestern Presbyterian, New Orleans.
Texas Presbyterian, Houston, Texas.
Texas Standard, Waco, Texas.
Texas Baptist and Herald, Dallas, Texas.
Western Recorder, Louisville, Ky.

GENERAL NEWS.

Abilene Reporter, Abilene, Texas.
Anvil, Castroville, Texas.
Chronicle, Denton, Texas.
*Dallas News (daily), Dallas, Texas.
Freie Presse Fur Texas, San Antonio, Texas.
Fort Worth Gazette, Fort Worth, Texas.
*Houston Post (daily), Houston, Texas.
*New York World (weekly), New York.
*Picayune (weekly), New Orleans, La.
Uvalde News, Uvalde, Texas.
Woman's Column, Boston, Mass.
Woman's Tribune, Washington, D. C.

ILLUSTRATED.

*Puck, New York.
*Ueber Land und Meer, Berlin, Germany.

JUVENILE.

Juvenile Ranger, Austin, Texas.
*St. Nicholas.
Travelers' Record, Hartford, Conn.
*Youth's Companion, Boston, Mass.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF ENGLISH AND HISTORY.

Professor, W. L. Bringhurst, Ph. D.
Associate Professor, W. B. Philpott.
Assistant Professor, Rev. W. S. Red, A. B.

The general aim of the instruction in this department is to make thorough, practical English scholars.

The following subjects are taught:

I. ENGLISH LANGUAGE AND LITERATURE.

Embracing the grammatical and rhetorical structure of the language, its history and development, synonyms, and comparative philology. That the student may thoroughly master the principles of his mother tongue, daily recitations are accompanied with practical exercises on the blackboard in writing, spelling, analyzing, and criticizing. Constant practice in declamation and composition is required.

The historical development of English literature is carefully traced, and the student is made as familiar with the works of our great authors, in poetry, history, philosophy, fiction, science, etc., as the time allotted will permit. Lectures are delivered to the classes, and original reviews, essays, and compositions are required.

Text Books—*Patterson's* Elements of Grammar, *Patterson's* Advanced Grammar and Rhetoric, *Lockwood's* Lessons, *Meiklejohn's* English Literature.

II. HISTORY.

The object of this course is to give the student a thorough knowledge of the history of his own country and of England, and an outline of the world's history, ancient and modern. Special attention is given to the history of the people, and the gradual development of civilization, power, laws, constitution, and political system of our republic. The department is well supplied with wall maps, globes, etc.

Text Books—*Barnes'* History of the United States, *Meyer's* General History, *Pennybacker's* Texas.

For reference and private reading the College library supplies an admirable collection of histories, dictionaries, biographies, and encyclopedias, besides works of poetry and general literature.

Candidates for admission into the fourth class are given an examination in the elementary branches of English grammar, orthography, etc.

DEPARTMENT OF MECHANICAL ENGINEERING.

Professor, R. H. Whitlock, M. E.
Assistant, A. M. Gunther.

This department is intended so to combine theory and practice that, after deriving a theoretical knowledge of a subject from the text books of standard writers, the student may go into the shop and apply that knowledge in a thoroughly practical manner. With this theoretical preparation the mind grasps the salient points and avoids the difficulties of the more practical part of the work. The work is carried on by aid of practice in the shops and drawing room, and by text books and lectures.

First the machinery of transmission is taken up and discussed, and especial attention paid to shafting, belts, speed pulleys, gear wheels, and kindred subjects. These lead the way to the higher forms of mechanism, and later the steam engine in its general principles and various forms is studied and discussed.

As stated above, the work in the class room is supplemented in every possible way by showing the student the practical application of these principles in the machinery used at the College.

Before graduating from this department, each student must place in the hands of the professor in charge a thesis treating of some mechanical subject, which shall be declared satisfactory by him.

SHOPS AND SHOP WORK.

Superintendent, Professor R. H. Whitlock.
Foreman of Machine and Blacksmith Shops, A. M. Gunther.
Foreman of Carpenter Shops, C. A. Lewis.

The Machine Shop is a one-story brick building, 80x35 feet, and is joined at one end by the Blacksmith Shop, which is also brick, 20x35 feet. At the other end it is in connection with the Carpenter Shop, and above the latter are class rooms, and model room fitted up for drawing and designing. This two-story building is also of brick, and was planned and built especially for this department. In beginning the practical work the student enters the Carpenter Shop, which is equipped with sixty sets of tools and benches. Here each student has his own set of tools when at work, and is held responsible for their condition. These tools are those which are in common use among carpenters, such as hammer, cross cut and panel saws, square, mallet, chisels, gauge, planes, and dividers, and must be kept in order by the student using them. Thus each student is taught in the beginning of his work not only the use of the tools, but also the importance of keeping them in good order, and in their

proper places. The work in this department begins with the simplest exercises, which consist mainly in making those joints which are in common use. Each of these exercises depends more or less on those preceding it, and becomes more and more difficult as it nears the end, thus carrying the student from "squaring" a piece of wood to the construction of a small bridge truss. The work is carried on from drawings, similar to those found in any of our shops, and thus the student learns not only to read mechanical drawings, but to construct the article wanted with only such drawings for a guide.

Having finished the wood work and acquired a knowledge of edged tools, the student is transferred to the Blacksmith Shop. Here he finds the same ideas of responsibility and good order. There are thirteen forges supplied with a blast from a power blower, which is run by an engine built and set up by the graduating class of 1888. Here, as in the Carpenter Shop, the first exercises are very simple, becoming more and more difficult as they proceed, until, at the end, the student has made welds of different kinds, a chain with hook and swivel, and has forged out and tempered several tools, such as engine lathe tools, and cold chisels. After this a move is made into the Machine Shop, where are found sixteen wood turning lathes. On these he receives instruction in both inside and outside turning, everything being made according to drawings furnished from the tool room. Then follows instruction in the use of iron working machinery, for which there is the following equipment: Six engine lathes, planer, drill, shaper, and milling machine. With these machine tools are taught the principles of cutting and shaping wrought and cast iron, steel, and brass. Throughout the course the student receives systematic instruction, and the work is so graded as to bring into use as far as possible those principles which have been taught him in the class room. The instruction throughout the course is made as practical as possible, and at the same time is of such a nature as to call for intelligent thought in connection with the manual labor. Special attention is called to the fact that all work is made, as far as possible, from drawings similar to those which the student will be called upon to use in any of our first-class machine shops, thus compelling him to think for himself and avoid becoming a mere automaton. All tools are furnished by the College with the exception of a two-foot rule, which may be obtained at the book store, College.

DEPARTMENT OF AGRICULTURE.

Professor, Geo. W. Curtis, M. S. A.
Assistant, J. M. Carson.
Foreman of Farm, J. W. Carson.
Stockman, J. B. Watts.

The design in the course of agriculture is to furnish not only close, practical instruction in all branches of progressive farming and stockraising, but also a broad and liberal education, fitting the student for the higher demands of agricultural industry and the full responsibilities of educated citizenship. For a complete outline of studies pursued, see curricula on preceding pages; the more important branches are briefly noted below.

In the study of domestic animals, careful attention is given to the merits and demerits of different breeds, origin, description, and characteristics being discussed specifically for each breed, with general notes on care, management, etc., pertaining to all.

Dairying is given considerable prominence. The creamery building is thoroughly furnished and fitted with the latest improved machinery and apparatus for the practical instruction of students, who perform the entire work, so far as their time will allow, under the immediate supervision of the professor or his assistant.

The aim is to thoroughly fit our students for taking charge of and operating creameries, as well as managing dairy farms, in any portion of the State.

In stockbreeding the aim is to acquire familiarity with the principles of selection, feeding, etc., to change or perpetuate characters, and laws governing the transmission of qualities. Especial attention is given to the breeding, selection, and management of dairy stock.

The study of cattle feeding is pursued in the natural order of topics discussed, taking up, first, the general laws of animal nutrition; second, the chemical composition of feeding stuffs; third, the feeding of farm animals. In this way a thorough knowledge is acquired of the principles and reasons upon which profitable cattle feeding is based, either upon the range or in the yard.

Practical work is required of each student in the feeding of animals for different purposes, and comparison of different fodders for the same purpose.

The senior class devote the year to the study of drainage and irrigation, fertilizers, and farm management. The latter includes comparison of the different branches of agriculture, rotative and successive cropping, management and economy of labor, selection and care of machinery,

care of stock, planting and harvesting cotton, grain, and forage crops, and general suggestions as to profit and loss in farming.

Practice is given regularly from four to eight hours per week throughout the course.

The fourth class conduct field tests with different crops and fertilizers. and are trained in judging stock of the different breeds, good specimens of which are found at the College.

The third and second classes perform all work in connection with the creamery, as previously stated.

The first class practice consists in the conduct of field and feeding experiments, laboratory, microscopic, and such other work as will best fit them for agricultural pursuits.

In addition to the above regular practice, all students are permitted and encouraged to work one or two afternoons each week or on regular detail work at other periods—at a maximum rate of ten cents per hour—at whatever work may be found to do. Students avail themselves of this opportunity to defray a portion of legitimate College expenses without detriment to their studies.

The library is well supplied with standard works of reference on all branches, which students may consult at any time in addition to the regular text books used in the course.

The establishment of the Agricultural Experiment Station at the College, under the supervision of the Professor of Agriculture, as director, makes it possible to give students the full benefit of all experiments conducted at the College, as well as permitting a careful study of results of valuable tests conducted elsewhere, by frequent reference to bulletins from other stations, files of which are kept in the Director's office.

DEPARTMENT OF CHEMISTRY AND MINERALOGY.

Professor, H. H. Harrington.
Associate Professor, Duncan Adriance.
Assistant, P. S. Tilson.

CHEMISTRY.

The subject of chemistry will be introduced by the study of inorganic chemistry, passing into a brief course of organic chemistry. The attention of the students will be directed to the historical development of the science, and to the phases of chemical theory as at present understood by chemists.

During this part of the course there will be constant practice in the use of symbols and in chemical calculations. When possible, students will make illustrative experiments for themselves. Special attention will be

given to technical processes and to the construction and working of apparatus for the manufacture of chemicals.

After the general principles of chemistry are understood, the study will be supplemented by practical work in the laboratory. This work will commence with the use of the blow-pipe, simple glass working, and fitting up of apparatus, continuing into quantitative analysis, both gravimetric and volumetric.

Advanced students will be required to investigate special subjects in original work and present their results to the professor.

Agricultural students will spend their time mainly in agricultural analysis, consisting of examination of soils, fertilizers, manures, feed stuffs, marls, ashes, etc. Advanced mechanical students will be given subjects in manufacturing chemistry.

MINERALOGY AND METALLURGY.

The course in mineralogy will be made as thorough as time will allow. Work in this department will commence in the second class, during which time much attention will be given to the systematic examination of minerals. The study is continued in the first class in connection with geology and metallurgy, special attention being given to the economic aspect of geology and to the metallurgy of iron and copper. The manufacture of charcoal and collecting the by-products, together with the use of charcoal furnaces in smelting iron ore, will be thoroughly discussed. Assaying, as practiced in connection with mines and metallurgy, will be taught to students of the B. M. E. course.

It is the object of the department of chemistry and mineralogy to make the course of study thorough and practical, and as far as possible to equip students with information that will be at once available on leaving College.

MEANS OF ILLUSTRATION AND WORK.

The laboratory is well supplied with chemicals, minerals, glass, porcelain, and platinum ware, gas holders and generators, filter pumps, including Geissler's, Sprengle's, Johnson's, with assay furnaces, muffles, crucibles, etc.; combustion furnaces, arrangement for Kjeldahl's nitrogen determinations; Hempel's and Elliott's gas apparatus; a soliellaurent saccharimeter, colorimeter, reflecting goniometer, Crouch's best binocular microscope, with fittings, etc. In short, the laboratory is well supplied with the latest improved apparatus needed in well established methods of analytical work and original investigation. Our balance room contains new and improved analytical balances of the finest quality.

Remsen's Chemistries are used as text books in Chemistry, and LeConte's and Nason's works as text books on geology and mineralogy.

By recent appropriation the Department has been supplied with books and current chemical literature, to which the students have free access.

DEPARTMENT OF MATHEMATICS.

Professor, CHARLES PURYEAR.
Associate Professor, ROBERT F. SMITH.
Adjunct Professor, A. L. BANKS.

Instruction in this department is given by the use of approved text books, supplemented by oral explanations and lectures. The course is designed to be thorough rather than extensive. The student's knowledge of the subject studied is tested daily at the blackboard, and he will be required to apply the principles taught to the solutions of practical problems. Written solutions of selected problems will be required at stated intervals.

The subjects pursued are as follows:

First year—Arithmetic, Elementary Algebra.

Second year—Elementary Algebra, Geometry.

Third year—Advanced Algebra, Geometry, Trigonometry.

Fourth year—Analytical Geometry, Mechanics, Calculus.

For instruction in geometry the department is supplied with a full set of Schroeder's models, imported for this institution.

Text books: Arithmetic, *Greenleaf;* Algebra, *Wells;* Geometry, *Wentworth;* Trigonometry, *Wells;* Analytical Geometry, *Peck;* Mechanics, *Wood;* Calculus, *Peck.*

SPECIMEN EXAMINATION PAPERS.

The following are specimen examinations given to candidates for the fourth and third classes:

ENTRANCE EXAMINATION FOR FOURTH CLASS.

Arithmetic.—Define least common multiple.

Find the least common multiple of 16, 140, 210.

Find the prime factors of 2445.

Add $1\frac{1}{2}$, $2\frac{2}{3}$, $3\frac{3}{4}$, $4\frac{4}{5}$.

From $25\frac{7}{10}$ take $14\frac{13}{15}$.

Change to a common fraction and reduce to its lowest terms .5625.

From $11\frac{3}{40}$ lbs. Troy wt. take 10 lbs. 8 oz. 8 pwt.

Reduce 4 oz. 3 pwt. 19.8 gr. to grains.

ENTRANCE EXAMINATION FOR THIRD CLASS.

Arithmetic.—Write decimally one thousand and fifty hundred thousandths.

Find the value of $\frac{7\frac{4}{11} - 5\frac{1}{10}}{4\frac{1}{3} \text{ of } 2\frac{1}{5}}$

Find the greatest common divisor of 2572 and 396.

To $\frac{7}{9}$ of a mile add $\frac{3}{16}$ of a yard.

Find the discount and the present worth of a note for $275, payable in $5\frac{1}{2}$ months, discounted at 10 per cent per annum.

Find the interest at 8 per cent on $425 for 2 years, 5 months, 18 days. What is the amount?

Change to decimals and add 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$.

A wine merchant sells wine at $1.20 per gallon, thereby losing 20 per cent; at what price must he sell in order to gain 10 per cent?

How much carpet 1 yard wide will be required for a room 16 feet by 18 feet, and what would be the cost at $1.37\frac{1}{2}$ per yard?

What is the unit of measure in the French system, and how was it determined?

Algebra.—Find the numerical value of $\{ [(a + b) c - d] x + y \} y$. when $y = 6$, $x = 8$, $a = 2$, $b = 3$, $c = 4$, $d = 5$.

Divide $x^4 - 4x^3y + 6x^2y^2 - 4xy^3 + y^4$ by $x^2 - 2xy + y^2$.

Find the factors, the greatest common divisor, and the least common multiple of $a^4 - b^4$ and $a^3 + 2a^2b + ab^2$; also, of $x^2 + 2x - 3$ and $x^3 + 8x^2 + 15x$.

Explain each operation fully.

Divide $\frac{x^4 - y^4}{x^2y}$ by $\frac{x}{y} + \frac{y}{x}$

Given $\frac{4x}{5 - x} - \frac{4(5 - x)}{x} = \frac{15}{x}$; find value of x.

Given $\frac{a}{b + y} = \frac{b}{3a + x}$; and $ax + 2by = d$; find values of x and y.

THE DEPARTMENT OF VETERINARY SCIENCE.

DR. M. FRANCIS, Professor in Charge.

The design of the course in Veterinary Science is two-fold. First, to acquaint the agricultural students with the diseases of our domestic animals; and second, to train their minds in sound and systematic methods of reasoning from effect to cause. To accomplish this the instruction begins with the study of comparative physiology. This is presented by lectures, recitations, and demonstrations on the living subject. Comparative anatomy is treated in a similar manner. The horse is taken as the type, and dissections are made during the winter months.

This is presented in such a manner as not only to acquaint the student with the structure of the horse, but to teach him *how* to study organic bodies. Veterinary medicine and surgery are presented by systematic lectures on the diseases of animals, and their treatment.

Materia Medica and Therapeutics are given considerable attention.

These lectures are illustrated by a discussion of the drugs used by the Veterinarian, and the methods of compounding and administering the same. Laboratory work consists in studying the microscopic structure of the tissues, the methods of hardening, sectioning, staining, and mounting. Each student is provided with a first class microscope, ranging from 50 to 400 diameters, and all necessary requisites for prosecuting the work. The department is equipped with Azoux's model of the horse, complete, and several special pieces of the same material. We have also the skeleton of man, horse, pig, goat, and various other animals, mounted. There are also a considerable number of skulls and other bones, both healthy and diseased. There is also quite a collection of parasites, tumors, monstrosities, dissected preparations, and surgical instruments belonging to the department. The library of the department is quite respectable, and contains all the standard works in English, and some in other languages. The total value of the equipment is about $3000.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

Professor, Benj. C. Morse, *First Lieut. 18th Infantry, U. S. Army.*

The instruction in this department is in conformity with the act of Congress, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

An officer of the regular army is detailed by direction of the President of the United States to carry out this requirement of the act in question, and the necessary arms, accoutrements and ammunition are furnished by the general government without cost to the College.

During the fall and spring terms practical military instruction is given in infantry and artillery drills, rifle firing, and the duties of guards and sentinels. During the winter term all military exercises are suspended except the necessary guard. A course of lectures is delivered to the first class, embracing the duties of guards and sentinels, military signaling and engineering, military law, the preparation of the usual returns and reports pertaining to a company, the organization and administration of the United States Army, and the elements of the art and science of war.

During this term the second class receives instruction in the section room in infantry tactics.

While the instruction in this department is as thorough as practicable in the limited time allowed, in liberal compliance with the requirements of the act of Congress endowing the College, it is not proposed to graduate soldiers. Practical military exercises are held at such hours as not to conflict with academic duties of students. The physical training of such exercises has the effect of straightening and strengthening the students, giving them an erect carriage and graceful bearing.

The military system is the means of enforcing discipline and securing regularity in the performance of academic duties, and tends to inculcate in the students that habit of truthfulness and manliness of character which characterize young men as gentlemen.

DEPARTMENT OF DRAWING.

Professor, F. E. Giesecke, M. E.
Assistant, D. W. Spence, C. E.

The course of instruction given in this department extends through four years; the work of the different classes is shown in the following outline of the course of study:

Fourth Class—*Penmanship and Free-Hand Drawing:* The lessons in penmanship tend to teach the student to write a plain and rapid business hand, by means of the muscular movement. The instruction in free-hand drawing is intended altogether as means of training the student's hand and eye, as well as his mind. The drawing books used are selected from Thompson's Primary and Advanced Free-hand Series.

Third Class—*Agricultural Course:* Free-hand drawing, one and one-half hours per week throughout session. Thompson's Advanced Free-hand and Model and Object Series are used.

Second Class—*Agricultural Course:* Mechanical drawing, two hours per week during spring term. This short course in drawing is given to enable the student to make the drawings necessary to his study and practice of surveying.

Third Class—*Mechanical Course:* Mechanical drawing, three hours per week throughout session. The student is taught the use of the drawing instruments in the drawing of simple figures, geometrical problems, and lettering during the fall term. During the winter and spring terms projection drawing is taught to prepare the student for the study of descriptive geometry. Practice in free-hand drawing is continued in this as well as in the two higher classes as an essential part of the regular work.

Second Class—*Mechanical Course:* Descriptive geometry three hours per week during fall, and two hours during winter term. Faunce's Descriptive Geometry is used as a text book, and is supplemented by weekly original problems. Two hours per week during each term are devoted to drawing higher plane curves, gear teeth, screws, and various conventional signs used by draughtsmen. During the spring term the student makes working drawings of parts of machines which involve the principles he has studied in descriptive geometry. Those who take the B. M. E. course receive lectures on the materials used in machine construction during this term.

First Class—*Mechanical Course:* The drawing in the fall term will consist of exercises in tinting, tracing blue printing, and isometric pro-

jections. Applicants for the degree of B. M. E. will in addition receive lectures on machine designing, and will have practical exercises at the drawing board, during the winter and spring term, in designing and making working drawings of machine elements or of simple machines. Applicants for the degree of B. C. E. will be required to make a number of working drawings, general and detail, of such machines, buildings or structures as is thought advisable.

Equipment: The department is equipped with a good set of skeleton and solid models and plaster casts for free-hand drawing; a complete set of Schroeder's models for descriptive geometry, and a number of drawing instruments, which are only used occasionally. There are also provided for the students' use all necessary instruments, squares, and triangles, so that the materials only have to be purchased by the student. These can be obtained at the College book store.

DEPARTMENT OF CIVIL ENGINEERING AND PHYSICS.

Professor, J. C. Nagle.
Assistant, D. W. Spence.

A. CIVIL ENGINEERING.

The Civil Engineering studies begin in the third year, or second class, and continue through two years. They are taken up in the following order:

Second Class—*First Term:* Road making and maintenance, two hours per week. The character of the road surface, as dependent on the traffic and locality, is fully discussed, and the application of various methods of improvement to typical localities in the State considered.

Second Term: Graphical statics, two hours per week. This subject is taught chiefly by lectures, and the principle of the force polygon is alone considered here. The student is required to work up fully the stresses in a number of different types of trusses for symmetrical, unsymmetrical, and wind loads.

Third Term: The entire second class study plane surveying for three hours per week during this term. After the instruments have been described and studied in the class room they are taken into the field, where the student spends five hours per week in surveying plats, retracing old lines from the field notes, leveling for profile, etc. He is required to plot on paper at least one of these surveys, and to draw on profile paper the surface line given by notes of instrumental lines run by himself.

Applicants for the degree of B. C. E. have also a course in topographical surveying for two hours per week. The subject is taught by lectures, with Winslow's tables to aid in reducing the notes of surveys made.

Text Books: Road Making, *Gillespie;* Graphic Statics, *Merriman and Jacoby;* Surveying, *Davies*, *Winslow.*

First Class—*First Term:* Railroad Engineering, the location, construction, and maintenance of railroads, five hours per week. Five hours per week is also devoted to practice with the instruments in the field, where the student learns how to run out preliminary and location lines, and afterwards to set slope stakes, based on a grade line best suited to the profile. The amount of excavation and embankment is then calculated, and the probable cost of construction determined.

A portion of the term is devoted to practice with the plane table and solar compass. A determination of the latitude and true meridian is also made by means of circumpolar stars.

A short course of two hours per week is also given in sanitary engineering—chiefly as regards sewerage and sewage disposal.

Second Term: Mechanics of materials, strength of materials of construction, five hours per week. Practice with the testing machines and field practice in good weather, four hours per week.

Third Term: Mechanics of materials and stresses in roofs and bridges by analytic methods, five hours per week. Stresses by graphic methods, one hour per week; the principles of the force polygon and equilibrium polygon are both employed in determining stresses in framed structures, due to fixed and moving loads.

Practice in field engineering continues for five hours per week throughout the term. In addition a course in designing and drawing for two and a half hours per week is given, in which the design for some simple roof truss or non-continuous bridge truss is undertaken, each member of the class being assigned some special truss. He is required to work up dimensions and weights of main members and connections, prepare a strain sheet, and make detail drawings for same.

Every candidate for the degree of B. C. E. is required to submit an approved thesis on some subject bearing on the work he has had in this department.

Text books: Field Engineer, *Shunk;* Sewers and Drains, *Adams* Sewage Disposal, *Corfield;* Mechanics of Materials, *Merriman;* Stresses by Graphic Methods, *Merriman and Jacoby;* Trusses and Arches, *Greene.*

B. PHYSICS.

Third Class.—*First Term:* The whole third class take up the study of elementary physics, meeting four hours per week. During this term they study the general properties of matter, mechanics, pneumatics, hydrostatics, accoustics and heat.

Second Term: Optics, electricity, and magnetism.

Third Term: More advanced course in electricity and magnetism. Only members of the mechanical course take this subject.

Text books: *Peck's* Ganot; *Deschanel's* Natural Philosophy, Part III.

The department is supplied with an excellent assortment of engineering instruments, including the following: One transit with solar attachment; one railroad transit; one surveyor's transit; three engineer's Y levels; two drainage levels; one solar compass; four other compasses; one sextant; one plane-table; one planimeter; one odometer; and an abundant supply of tapes, chains, pins, flag poles, leveling rods, stadia rods, etc. The department owns two fine Riehle Bros. testing machines—one of one thousand pounds capacity for cements and mortars, and the other of twenty thousand pounds capacity, arranged for tension, compression and cross-breaking.

The supply of physical instruments is amply sufficient for illustrating and verifying the laws enunciated in the text.

Throughout the department the aim is toward thoroughness, rather than the superficial covering of a large field. The student is encouraged to think for himself, and special problems are assigned him to test his knowledge of the subjects gone over, and at the same time cause him to gain confidence in the methods he makes use of. Many numerical problems are necessary before he fully grasps the meaning of the general formulas deduced in the text.

DEPARTMENT OF HORTICULTURE AND BOTANY.

Professor, R. H. Price.
Assistant Professor, H. Ness.

The design of the course in Horticulture is to combine with the technical work of the department such instruction in related sciences and general education as will best prepare the student to meet the greatest demands of the horticultural industry. Throughout the course instruction is given in subjects of general importance not enumerated below. The first two years the courses in horticulture and agriculture are the same.

ENTOMOLOGY.

Structural—*Third Year*, *Fall Term:* External anatomy and comparative morphology of the orders and more important families. Practice given in laboratory in dissecting and classifying.

Economic—*Fourth Year*, *Spring Term:* Injurious insects and the methods of preventing their depredations. Spraying machinery, insecticides and their application.

Text book: Entomology For Beginners, *Packard.*

Reference books: Insecta, *Hyatt* and *Arms.* *Comstock's* Introduction to Entomology.

BOTANY.

ORGANOGRAPHY—*Second Year, Fall Term:* Gross anatomy, the study of the organs with which plants do their work; as roots, stem, leaves, and flowers. Their various forms and modifications.

SYSTEMATIC—*Second Year, Spring Term:* Nomenclature, classification, description of flowering plants, and the art of collecting, naming, mounting, and preserving them. An herbarium may be required.

HISTOLOGICAL—*Third Year, Fall Term:* Advanced work in structural botany; examining the minute structure of the root, stem, leaf, flowers, and fruit, with compound microscope.

PHYSIOLOGICAL—*Third Year, Winter Term:* Physiology of plants in connection with microscopic work. The student prepares his own slides; making notes, drawings, and employing reagents. In the latter part of the term the student begins the study of cryptogams.

Text books: *Bastin's* College Botany; *Gray's*, Vols. I. and II.; *Woods'* New Class Book of Botany.

Reference books: *Chapman's* Southern Flora; Text Book of Botany, *Bessy; Sach's* Botany.

MYCOLOGY—*Fourth Year, Fall and Winter Terms:* Systematic study of economic fungi in the Fall Term, and in the Spring Term the student makes cultures on media, infects living plants, and prepares and applies fungicides. An herbarium of fungi is required. The subject is taught by lectures.

Reference books: Comparative Morphology and Biology of Fungi, *De Bary; Plowright's* Monograph of Uredineæ and Ustillagineæ; *Burrill's* Monograph of Uredineæ and Erysipheæ; United States Government and Experiment Station Reports.

HORTICULTURE.

FRUIT CULTURE—*Second Year, Winter Term:* Study of growth, culture, and propagation of the apple, pear, peach, plum, apricot, and cherry. Planting and managing orchards.

Text book: *Thomas'* American Fruit Culturist.

Reference books: *Barry's* Fruit Garden; *Downing's* Fruit and Fruit Trees of America.

OLERICULTURE—*Second Year, Spring Term:* Growth, culture, preservation, and marketing vegetables. Practice in the gardens and experimental plats.

Text book: Truck Farming for the South, *Oemler.*

Reference book: Vegetable Garden, *Vilmorin-Andrieux.*

SMALL FRUIT CULTURE—*Third Year, Spring Term:* Special lectures upon the culture and marketing of strawberries, raspberries, blackberries, currants, etc.

VITICULTURE—*Fourth Year, Fall Term:* Culture, growth, and propagation of the grape and the management of vineyards.

Text book: American Grape Growing and Wine Making, *Husmann.*

FORESTRY—*Fourth Year, Winter Term:* The management and planting of woodlands. Consideration of the role they play in the economy of nature.

Text book: Elements of Forestry, *Hough.*

LANDSCAPE GARDENING—*Fourth Year, Winter Term:* Designing, planning, and management of lawns. The art of beautifying American homes.

Text book: Ornamental Gardening, *Long.*

The student before graduating submits to the professor in charge a thesis on some horticultural or botanical subject. The department is fairly well equipped. The care of the orchards and vineyards and the experiments with vegetables afford ample practice in field work.

DEPARTMENT OF LANGUAGES.

Professor, T. C. BITTLE, A. M., PH. D.

It is the object of the department to furnish students of the horticultural and civil engineering courses, and others who may desire it, with a practical knowledge of German, Latin, or Spanish, such as will benefit them in the prosecution of a scientific career.

To this end, the text books used and the method of imparting instruction are practical; Latin is taught as an essential to a thorough understanding of English; German, because it is a treasure house from which the general student can not afford to be shut out; Spanish, in view of the rapidly growing intercourse between us and the Latin Republics south of us; all of them, because systematology and scientific nomenclature are undefinable without a knowledge of foreign languages.

Students coming to us, therefore, from the high schools of the State find here the opportunity to continue their linguistic studies by the side of Agricultural and Mechanical branches, to which they lend effective aid.

TEXT BOOKS.

In Spanish, De Torno's and Ybarra's Grammars, with references to Knapp, and selections from reading from various sources.

In German, Joynes-Meissner's and Sheldon's Grammars, with selections in reading, suited to the student's advancement.

In Latin, Chase and Stuart's Grammars, with references to more systematic courses, and readings from Cæsar, Virgil, Cicero, etc., as the exigencies of the course permit.

ALUMNI.

ALUMNI ASSOCIATION.

(Organization for 1892-93.)

E. W. Hutchinson, 1889.....President.
W. A. Beesley, 1892.....First Vice President.
W. L. Nichols, 1891.....Second Vice President.
L. E. Allen, 1887.....Third Vice President.
F. E. Giesecke, 1886.....Secretary and Treasurer.
E. H. Sauvignet, 1892.....Editor College Journal.

EXECUTIVE COMMITTEE.

D. Adriance, 1886, E. W. Hutchinson, 1889, F. F. Giesecke, 1886.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective. There were many graduates during that period in one or more departments.

Names of deceased alumni are marked †.

The present occupations of the alumni are given as far so known, but information as to these is not readily accessible, and errors may be found in that given here. The alumni are requested to aid the president in making their roll as complete as possible, as a means of conveying to each trustworthy intelligence of all the others.

1878.

GERMAN.—R. A. Rogers, W. A. F. Trenckman.
LATIN.—R. A. Rogers.

1879.

LATIN.—A. Cunningham, P. L. Downs, F. W. Fort, J. R. Downs, D. M. Jack, E. Y. Mullins, R. A. Rogers, W. M. Sleeper.

GREEK.—A. Cunningham, P. L. Downs, F. W. Fort, R. A. Rogers, W. M. Sleeper.

GERMAN.—S. Baker, A. L. Banks, W. H. Brown, M. L. Chambers, A. Cunningham, P. L. Downs, J. R. Downs, F. W. Fort, T. A. Fuller, D. M. Jack, L. J. Kopke, E. Y. Mullins, F. A. Reichardt, Charles Rogan, R. A. Rogers, W. M. Sleeper, H. G. Smythe, W. A. F. Trenckman, K. M. Van Zandt.

FRENCH.—J. J. Baker, E. G. Cochran, W. A. F. Trenckman.

SPANISH.—J. J. Baker, T. H. Brown, D. Campbell, J. H. Haden, W. A. F. Trenckman.

MENTAL AND MORAL SCIENCE.—J. J. Baker, M. Black, E. G. Cochran, W. A. F. Trenckman, D. M. Jack, R. A. Rogers.

ENGLISH LANGUAGE AND LITERATURE.—M. Black, E. G. Cochran, J. J. Baker, D. M. Jack, Charles Rogan, R. A. Rogers, W. A. F. Trenckman.

MATHEMATICS.—A. Cunningham, L. J. Kopke, W. M. Sleeper.
CHEMISTRY AND NATURAL SCIENCE.—Charles Rogan, A. Cunningham, W. A. F. Trenckman.

1880.

ENGLISH.—C. S. Miller, F. F. Bledsoe, D. E. Alexander, E. E. Fitzhugh, T. E. Blakemore.
GREEK.—F. F. Bledsoe.
LATIN.—D. E. Alexander, C. S. Miller, E. E. Fitzhugh.
MATHEMATICS.—E. E. Fitzhugh, D. E. Alexander, Thomas E. Blakemore.†

1880.

L. J. Kopke, C. E.....Engineer.
W. H. Brown, C. E.....Lawyer.

1881.

G. H. Dugan.....Stockraiser.

1882.

Name.	Course.	Occupation.
M. F. Armstrong	Mechanical	Farmer, Pro. C. H. F. C.
Searcy Baker	Mechanical	Merchant.
J. M. Buford	Mechanical	Druggist, Physician.
F. R. Von Biberstein†	Mechanical	
J. R. Cravens	Mechanical	Civil Engineer.
C. S. Graves	Mechanical	Civil Engineer.
S. A. Hare	Mechanical	Lawyer.
R. S. Lipscomb	Mechanical	Physician.
David Rice	Mechanical	Lumber Manufacturer.
Robert Sawyer	Mechanical	Lumber Dealer.
Aaron Talbot	Mechanical	Farmer.
D. H. Watson	Mechanical	Horticulturist.

1883.

Name.	Course.	Occupation.
J. C. Caldwell†	Mechanical	
J. F. Edwards	Mechanical	Civil Engineer.
Osborne Kennedy	Mechanical	Lawyer.
H. J. Miller	Mechanical	Merchant.
W. E. Mosley†	Mechanical	
A. T. Patrick	Mechanical	Lawyer.
W. L. Tuller	Mechanical	Real Estate Agent.
J. M. Wesson†	Mechanical	

1884.

Name.	Course.	Occupation.
G. W. Roach	Mechanical	Superintendent City School.
W. Wipprecht	Agricultural	Druggist.
J. L. Gray	Mechanical	Civil Engineer.
T. B. McQueen	Mechanical	Merchant.

N. A. Dawson	Mechanical	Lawyer.
F. C. Von Rosenberg	Mechanical	Lawyer.
B. C. Makensen	Mechanical	Teacher.
A. L. Shirley	Agricultural	Railroad Agent, Merchant.
R. E. Pennington	Agricultural	Lawyer.
G. Giesecke	Mechanical	Sec. and Gen. Mangr. San Antonio Gas Works.
R. B. Green	Mechanical	Merchant.
W. B. Philpott	Mechanical	Associate Prof. A. & M. C.
B. E. Knolle	Mechanical	Physician.
V. Andrews	Mechanical	Teacher.

1885.

Name.	Course.	Occupation.
W. Wipprecht	Agricultural	Druggist.
J. N. Davis	Mechanical	Superintendent City Schools.
F. L. Pfeuffer	Mechanical	Merchant.
W. Whitaker	Mechanical	Contractor.
T. D. Rowell	Agricultural	Lawyer.
F. Caruthers	Agricultural	Teacher.
F. E. Dudley	Mechanical	Druggist.
L. Makensen	Mechanical	Watchmaker.
C. H. Pescay	Mechanical	Insurance Adjuster.
S. Hough	Mechanical	
E. W. Spann†	Mechanical	

1886.

Name.	Course.	Occupation.
D. Adriance	Agricultural	Assoc. Prof. A. & M. College.
F. E. Giesecke	Mechanical	Prof. Drawing A. & M. College.
M. D. Tilson	Mechanical	Civil Engineer.
H. L. Wright	Mechanical	Civil Engineer.
I. A. Cottingham	Mechanical	Civil Engineer.
E. H. Whitlock	Mechanical	Draughtsman.
J. W. Carson	Agricultural	Asst. Agl. Exp. Station.
C. L. Burchard	Mechanical	Assistant Postmaster.
J. M. Carson	Agricultural	Asst. Prof. Agr., A. & M. Col.
W. F. Woodward	Mechanical	Merchant.
C. C. McCulloch	Mechanical	Surgeon U. S. Army.

1887.

Name.	Course.	Occupation.
G. A. Rogers	Mechanical	Assistant Cashier in Bank.
F. L. Fordtran	Agricultural	Physician.
J. H. Freeman	Mechanical	Proprietor Livery Stable.
H. J. McNair	Mechanical	Railroad Office.
T. B. West	Mechanical	Railroad Office.
L. E. Allen	Mechanical	Bookkeeper.
E. R. Knolle	Mechanical	Physician.
J. B. Hereford	Mechanical	Insurance Agent.
H. C. Hare	Mechanical	Lawyer.
E. Gruene	Mechanical	Merchant.

1888.

Name.	Course.	Occupation.
W. H. Allen	B. S. A	Druggist.
Paul Braun	B. M. E	Draughtsman, S. P. Shops, Houston.
R. H. Dietert	B. M. E	Machinist H. & T. C. Shops, Houston.
F. C. Hoffman	B. M. E	Watchmaker.
H. F. Jonas	B. C. E	Draughtsman S. P. Ry., B. & B. Division, Houston.
N. L. Josey	B. S. A	Merchant.
A. P. Knolle		Physician.
W. H. Knolle	B. C. E	Merchant.
W. O. R. Pfeuffer	B. S. A	Student.
F. Rennert	B. S. A	Bookkeeper.
Z. M. Shirley	B. M. E	Lawyer.
E. J. Smith	B. S. A	Lawyer.
W. W. Stewart	B. M. E	Miller.
M. S. Swain	B. S	Lawyer.
P. S. Tilson	B. S. A	Asst. Prof. A. & M. College.
W. M. Wood	B. C. E	Civil Engineer.
W. A. Wurzbach	B. C. E	Lawyer.

1889.

Name.	Course.	Occupation.
Louis Daniel Amsler	B. M. E	Miller.
Charles A. Buckman	B. C. E	Engineer.
Lawrence Burroughs Burck	B. C. E	Railroad Agent.
William Elizabeth Drisdale	B. S	Student.
John D. Fearhake	B. C. E	Lawyer.
Edward Walthall Hutchinson	B. C. E	Bookkeeper A. & M. College.
Walter Toole Jones	B. C. E	Civil Engineer.
John Frank Kuehne	B. M. E	Alamo Fire Insurance Co.
William Wirt K. Leggett	B. C. E	Civil Engineer.
Robert Mabry	B. C. E	Commercial Traveler.
William Brady Merritt	B. S. A	Lawyer.
Earl Sloan Middlebrook	B. C. E	Foreman Lumber Mill.
Frank Lillard Montgomery	B. S. A	Farmer.
Helge Ness	B. S	Asst. Prof. Hort. A. &. M. Col.
Joseph Francis Nichols	B. S	Student.
James Routte Nichols	B. S. A	Student.
Benjamin Freeman Rogers	B. C. E	Merchant.
Merideth William Shirley	B. M. E	Merchant.
William Morton Shirley	B. C. E	Farmer.

1890.

Name.	Course.	Occupation.
D. Adriance, M. S	Post Graduate	Assoc. Prof. A. & M. College.
F. E. Giesecke, M. E	Post Graduate	Prof. Drawing A. & M. College.
C. C. McCulloch, C. E	Post Graduate	Student.

W. B. Philpott, M. S.....Post Graduate...Assoc. Prof. A. & M. College.
Anderson, William Dilworth..B. S. A.....City Secretary.
Brittingham, Wm. Frank, Jr..B. C. E.....New York.
Backus, Ulysses ....B. M. E.....Mexican National Railway.
Flynt, Henry Calvin.....B. S. A.....Farmer.
Hanschke, Robert Jr.....B. M. E.....Student.
Hernstadt, Sidney Johnson...B. C. E.....Civil Engineer.
Hopkins, Sam Houston .....B. S. A.....Lawyer.
Kyle, Joseph Allen .....B. S. A.....Student.
Rudasill, William Stone.....B. C. E.....Unknown.
Ragsdale, James William.....B. S. A.....Student.
Radford, John Seth.....B. S. H.....Bank Cashier.
Schmidt Charles Louis.....B. M. E.....Machinist.
Van Zandt, Richard Lipscomb, B. C. E.....Clerk in Bank.
Wangemann, Arthur Edward, B. S. A.....Real Estate Agent.

1891.

Name.	Course.	Occupation.
Ahrenbeck, William T.....	B. M. E.....	Draughtsman So. Pacific Ry.
Cushing, Dan.....	B. M. E.....	Southern Pacific Railway.
Dashiell, Walter R.....	B. C. E.....	Student.
Field, Herbert Y.....	B. S. A.....	Unknown.
Henderson, Hal.....	B. S. A.....	Unknown.
Luckett, William H.....	B. S. A	Student.
Littlejohn, Robert G.....	B. C. E.....	Insurance Agent.
McCormick, George, Jr.....	B. M. E.....	Draughtsman So. Pacific Ry.
Merriwether, William T.....	B. C. E.....	Civil Engineer.
Middlebrook, Robert M.....	B. M. E.....	Student.
Morrill, Clifford R.....	B. C. E.....	Draughtsman So. Pacific Ry.
Nichols, William L.....	B. C. E.....	Civil Engineer.
Pfeuffer, Ulrich S	B. C. E.....	Clerk.
Welhausen, Charles B	B. M. E.....	Bank.
Whealan, James J	B. M. E.....	Machinist, H. & T. C. R. R.
Whitener, Harry L.....	B. S. A.....	Student.
Puckett, J. H.....	Spec'l in Chem..	Student.
Read, W. K.....	Spec'l in Chem..	Student.

1892.

Name,	Course.	Occupation.
P. S. Tilson, M. S.....	Post Graduate...	
Adams, F. L.....	B. S. A.....	Student.
Altgate, E. J.....	B. C. E.....	Bank.
Beesley, Walter S.....	B. C. E.....	Teacher.
Beyer, Frederick C.....	B. M. E.....	S. P. Ry. Shops.
Bailey, Charles C.....	B. C. E.....	Merchant.
Buhler, Chris W.....	B. C. E.....	Civil Engineer.
Buford, Frank L.....	B. C. E.....	Asst. City Engineer.
Boykin, Rufus E.....	B. M. E.....	Teacher.
Cook, Edgar A.....	B. M. E.....	South Bend Iron Works.
Cox, DeWitt S.....	B. C. E.....	Journalist.
Cottingham, Wesley P.....	B. C. E.....	Civil Engineer.
Ellis, Billie V.....	B. S. A.....	Student.

Floyd, J. F., Jr.....B. M. E.....Draughtsman, Eng. Office.
Gurley, David R., Jr.....B. C. E.....Farmer.
Giesecke, William E.....B. M. E.....Draughtsman, Archt. Office.
Grupe, George.....B. M. E.....Unknown.
Moore, Rob.....B. S. A.....Unknown.
Moore, Tom E.....B. S. A.....Merchant.
Neathery, Dan E.....B. S. A.....Merchant.
Ortiz, Jose A.....B. C. E.....Unknown.
Ratchford, William P.....B. M. E.....Asst. Engineer.
Schumacher, Henry C.....B. C. E.....Clerk in Bank.
Sauvignet, Edmund H.....B. S. A.....Unknown.
Wright, Edgar.....B. C. E.....Student.
Watkins, W. A.....B. C. E.....Unknown.
Guenther, F. E.....Spec. in Chem...Student.

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS.

This College owes its origin to

An Act Donating Public Lands to the several States and Territories which may Provide Colleges for the Benefit of Agriculture and the Mechanic Arts.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land, to be apportioned to each State, a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty; provided, that no mineral lands shall be selected or purchased under the provisions of this act.

SEC. 2. And be it further enacted, that the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said States shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this act, land scrip. to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said States and the proceeds applied to the uses and purposes prescribed in this act, and for no other use or purpose whatsoever; provided, that in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United

States subject to sale at private entry at one dollar and twenty-five cents or less per acre; and, provided further, that no more than one million acres shall be located by such assignees in any one of the States; and, provided further, that no such location shall be made before one year from the passage of this act.

SEC. 3. And be it further enacted, That all the expenses of management, superintendence and taxes from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. And be it further enacted, That all moneys derived from the sale of the lands aforesaid, by the States to which the lands are apportioned, and from the sale of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks, yielding not less than 5 per centum upon the par value of said stocks, and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in section 5 of this act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

SEC. 5. And be it further enacted, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts:

First. If any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall, by any action or contingency, be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund may remain undiminished, and the annual increase shall be regularly applied without diminution to the purposes mentioned in the fourth section of this act, except that a sum not exceeding 10 per centum upon the amount received by any State, under the provisions of this act, may be expended for the purchase of lands for sites or experimental farms, wherever authorized by the respective Legislatures of said States.

Second. No portion of said fund, nor the interest thereon, shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

Third. Any State which may take and claim the benefit of the provisions of this act shall provide, within five years, at least not less than one college, as described in the fourth section of this act, or the grant to such State shall cease, and said State shall be bound to pay to the United States the amount received of any lands previously sold, and that the title to purchasers under the State shall be valid.

Fourth. An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their costs and results, and such other matters, including State industrial and economical statistics, as may be supposed useful, one copy of which shall be transmitted by

mail free by each to all the other colleges which may be endowed under the provisions of this act, and also one copy to the Secretary of the Interior.

Fifth. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the State at the maximum price, and the number of acres proportionately diminished.

Sixth. No State, while in a condition of rebellion or insurrection against the government of the United States shall be entitled to the benefits of this act.

Seventh. No State shall be entitled to the benefits of this act unless it shall express its acceptance thereof by its legislature within two years from the date of its approval by the President.

SEC. 6. And be it further enacted, That land scrip issued under the provisions of this act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. And be it further enacted, That land officers shall receive the same fees for locating land scrip issued under the provisions of this act as is now allowed for the location of military bounty land warrants under existing laws; provided, their minimum compensation shall not be thereby increased.

SEC. 8. And be it further enacted, That the governors of the several States to which scrip shall be issued under this act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

And to the following amendment:

An act to amend the fifth section of an act entitled "An act donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," approved July 2, eighteen hundred and sixty-two, so as to extend the time within which the provisions of said act shall be accepted and such colleges established.

1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the time in which the several States may comply with the provisions of the act of July 2, eighteen hundred and sixty-two, entitled, "An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," is hereby extended so that the acceptance of the benefits of the said act may be expressed within three years from the passage of this act, and the colleges required by the said act may be provided within five years from the date of filing of such acceptance with the Commissioner of the General Land Office; provided, that when any Territory shall become a State and be admitted into the Union, such new State shall be entitled to the benefits of said act of July 2, eighteen hundred and sixty-two, by expressing acceptance therein required within three years from the date of its admission into the Union, and providing the college or colleges within five years of such acceptance, as prescribed in this act; provided further, that any State that has heretofore expressed its acceptance of the act herein referred to shall have the period of five years within which to provide at least one college, as described in the fourth section of this act, after the time for providing said college, according to the act of July 2, eighteen hundred and sixty-two, shall have expired.

Approved July 23, 1865.

By joint resolution, approved November 1, 1871, the Legislature of Texas formally accepted the provisions of the congressional acts, and the State received from the general government scrip for 180,000 acres of public land, the proceeds of which constitute the present permanent endowment fund of this college, and is in Texas 7 per cent gold frontier defense bonds, to the amount of $174,000.

The Legislature fulfilled its obligations by passing "An act to provide for the establishment of an Agricultural and Mechanical College of Texas," approved April 17, 1871, and by making liberal successive appropriations (aggregating $187,000) for the buildings and equipments necessary for putting the institution in operation. And the county of Brazos secured its location within its limits by donating to the State the present college farm, a tract of 2416 acres, five miles south of the town of Bryan.

Finally, the Constitution of 1876, article VII, provided: "Section 3. The Agricultural and Mechanical College of Texas, established by the act of the Legislature, passed April 17, 1871, located in the county of Brazos, is hereby made and constituted a branch of the University of Texas, for instruction in agriculture, the mechanic arts, and the natural sciences connected therewith."

The College was formally opened for the reception of students October 4, 1876.

The Constitution of Texas provides that taxes may be raised for the maintenance and support of the College.

The following act of the Legislature of Texas is now the law governing the College:

An act regulating the government of the Agricultural and Mechanical College of Texas, as approved March 9, 1875, and amended March 30, 1881.

I. The Board of Directors of said College shall consist of five members.

II. The Directors provided for in the preceding article shall be appointed by the Governor, to be selected from the different sections of the State, and shall hold office for six years, or during good behavior, and until their successors are qualified.

III. The Governor shall be authorized to call said Board together after their appointment, and said Board shall at their first meeting elect a president of the Board, who shall thereafter be authorized to call said Board together for the transaction of business whenever he deems it expedient, and a majority of said Board shall constitute a quorum for the transaction of business.

IV. Each of said Directors shall receive their actual expenses incurred in attending the meetings of the Board, to be paid out of the interest of the University fund, on accounts certified by them respectively to be correct, and approved by the Governor.

V. The Secretary of State shall forward a certificate to each Director within ten days after his appointment, notifying him of the fact of such appointment; and should any Director so appointed and notified fail for ten days to give no-

tice to the Governor of his acceptance, his appointment shall be deemed void and his place filled as in case of vacancy.

VI. The Board of Directors shall appoint the President and Professors of the College, and such other officers as they may think proper to put the College into successful operation, and shall make such by-laws, rules and regulations for its government as they deem meet and proper for that purpose, and shall regulate the course of study, rates of tuition, manner of performing labor, and the kind of labor to be performed by the students, together with the course of discipline necessary to enforce the faithful discharge of all the duties of all officers, professors and students, and shall have same printed and circulated for the benefit of the people of the State and officers and students of the College.

VII. The Board of Directors shall elect a Secretary of the Board, whose duty it shall be to keep in a well-bound book all the proceedings had by this Board, and he shall be allowed by said Board such compensation as they may allow; provided, that the same does not exceed five hundred dollars per annum.

VIII. The interest on the amount of one hundred and seventy-four thousand dollars in 7 per cent gold interest-bearing frontier bonds of Texas, now in the State treasury to the credit of the College, being set apart for that purpose, shall be drawn by the Board of Directors on vouchers audited by the Board, or approved by the Governor and attested by the Secretary, and on filing such vouchers the Comptroller shall draw his warrant on the State treasury for the same, from time to time as they may be needed, to pay the directors, officers and professors of the College.

The following joint resolution was passed by the Sixteenth Legislature:

Joint resolution authorizing the State Librarian to turn over to the Agricultural and Mechanical College of Texas specimens of minerals and other geological specimens in the geological department in said library in certain cases, and copies of all public documents of the State, published for distribution, and all apparatus belonging to the old geological survey.

SECTION 1. *Be it resolved by the Legislature of the State of Texas*, That the State Librarian be and he is hereby authorized and required to turn over to the Agricultural and Mechanical College of Texas the duplicate specimens in the hands of the agent of the International Railroad Company of all minerals and other geological specimens in the geological department in said library, and copies of all public documents of the State published for distribution, and apparatus belonging to the old geological survey, for the use and benefit of said College.

SEC. 2. That said librarian be required to take an inventory of all specimens thus turned over to said College by him, and file the same in his office.

SEC. 3. The near approach of the close of this session of the Legislature, and the pressing need of geological specimens at said College for the better instruction of its pupils, creates an imperative public necessity for the suspension of the constitutional rule requiring this resolution to be read on three several days; therefore be it further resolved, that the constitutional rule be suspended and this resolution take effect and be in force from and after its passage.

Approved July 9, A. D. 1879.

An Act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress, approved July second, eighteen hundred and sixty-two.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That there shall be, and hereby is, annually appropriated out of any money in the treasury not otherwise appropriated, arising from the sale of public lands, to be paid as hereinafter provided, to each State and Territory, for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts, now established, or which may be hereafter established, in accordance with an Act of Congress, approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years, by an additional sum of one thousand dollars over the preceding year; and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life and to the facilities for such instruction; provided, that no money shall be paid out under this Act to any State or Territory for the support or maintenance of a college where a distinction of race or color is made in the admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act, if the funds received in such State or Territory be equitably divided, as hereinafter set forth; provided, that in any State in which there has been one college established in pursuance of the Act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue, for the e lucation of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equitable division of the fund to be received under this Act, between one college for white students, and one institution for colored students, established as aforesaid, which shall be divided into two parts, and paid accordingly; and thereupon such institution for colored students shall be entitled to the benefits of this Act, and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two; and the fulfillment of the foregoing provisions shall be taken as a compliance with the provisions in reference to separate colleges for white and colored students.

SEC. 2. That the sums hereby appropriated to the States and Territories for the further endowment and support of colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury, upon the warrant of the Secretary of the Interior, out of the treasury of the United States, to the State or Territorial treasurer, or to such officer as shall be designated by the laws of such State or Territory to receive the same, who shall, upon the order of the trustees of the college, or the institution for colored students, immediately pay over said sums to the treasurers of the respective colleges, or other institutions entitled to receive the same, and such treasurers

shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior, on or before the first day of September of each year, a detailed statement of the amount so received, and of its disbursement. The grants of moneys authorized by this act are made subject to the legislative assent of the several States and Territories to the purpose of said grants; provided, that payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this act, shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more complete endowment, support and maintenance of colleges, or of institutions for colored students, as provided in this act, shall, by any action or contingency, be diminished or lost, or be misapplied, it shall be replaced by the State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings. An annual report by the president of each of said colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any experiment stations attached to such colleges, with their cost and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail, free, to all other colleges further endowed under this act.

SEC. 4. That on or before the first day of July in each year after the passage of this act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or for institutions for colored students, under this act, and the amount which thereupon each is entitled, respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation, the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid, it shall be covered into the treasury; and the Secretary of the Interior is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this act.

Approved August 30, 1890.

TEXAS AGRICULTURAL EXPERIMENT STATION.

ORIGIN.

The Agricultural Experiment Station has been established by the Congress of the United States, as shown by the following bill. This will be of great benefit to the agricultural course:

Full Text of the Experiment Station Bill as enacted by Congress and approved by the President.

An act to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an act approved July 2, 1862, and of the acts supplementary thereto.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled*, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of the college or colleges, or agricultural departments of colleges, in each State or Territory, established, or which may be hereafter established, in accordance with the provisions of an Act approved July 2, 1862, entitled "An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "Agricultural Experiment Station;" provided, that in any State or Territory in which two such colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such colleges, unless the Legislature of said State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the

tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important, and in general to furnish such advice and assistance as will best promote the purposes of this act. It shall be the duty of each of said stations, annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of the said stations, to the said Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. The bulletins or reports of progress shall be published at said stations at least once in three months; one copy of each shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge of postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of $15,000 is hereby appropriated to each State, to be specially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of section 2 of this act, out of any money in the treasury proceeding from the sale of public lands, to be paid in equal quarterly payments on the first day of January, April, July and October of each year, to the treasurer or other officer duly appointed by the governing boards of said colleges to receive the same, the first payment to be made on the first day of October, 1887; provided, however, that out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five (5) per centum of such annual appropriations may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury, from the annual statement of receipts and expenditures of any of said stations, that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the next succeeding annual appropriation to such station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this act shall be so construed to impair or modify the legal relation existing between any of the said colleges and the governments of the States and Territories in which they are respectively located.

SEC. 8. That in States having colleges entitled under this section to the benefits of this act, and having also Agricultural Experiment Stations established by law separate from said colleges, such States shall be authorized to apply such benefits to experiments at stations so established by said States; and in case any State shall have established, under the provisions of said act of July 2, aforesaid, an agricultural department or experimental station in connection with any university, college or institution not distinctively an agricultural college or school, and such State shall have established, or shall hereafter establish, a separate agricultural school which shall have connected therewith an experimental farm or station, the Legislature of such State may apply, in whole or in part, the ap-

propriation by this act made to such separate agricultural college or school, and no Legislature shall by contract, express or implied, disable itself from so doing.

SEC. 9. That the grants of moneys authorized by this act are made subject to the legislative assent of the several States and Territories to the purpose of said grants; provided, that payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 10. Nothing in this act shall be held or construed as binding the United States to continue any payments from the treasury to any or all of the States or institutions mentioned in this act, but Congress may, at any time, amend, suspend or repeal any or all of the provisions of this act.

ORGANIZATION.

In 1887 Congress made provision for establishing, equipping and supporting agricultural experiment stations in the several States, the stations to be placed under the supervision of the Boards of Directors of the State Agricultural and Mechanical Colleges, where such colleges have been established.

The act of Congress appropriates $15,000 per annum from the United States Treasury, to each State, to equip and support the stations. Owing to some technical defect in the bill as passed, additional legislation was required to make the fund available. By recent enactment the appropriation is placed at the disposal of the several States, and the stations are being organized.

OBJECT OF THE STATIONS.

The purpose for which the agricultural experiment station bill was passed is clearly set forth in section 2 of the act, which reads as follows:

"It shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as furnished under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effect on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese, and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable."

The bill further provides that reports of the progress made in experiments shall be published from time to time, one copy of which shall be sent to each newspaper published in the State where such station is located, and one to each individual actually engaged in farming who may request the same, as far as the means of the station will permit; all such reports to be carried in the mails free.

The experiment stations were placed under the supervision of the Boards of Directors of the Agricultural and Mechanical Colleges, not for the purpose of assisting the colleges, but because it was thought the fund would be most judiciously expended under such control, and it was believed that a portion of the equipment of said colleges, in the way of land, stock, implements, etc., might, without detriment to the work of the colleges, be used to some extent in experimental work. It was thought also that men employed at the colleges, many of whom have become skilled in experimental work, would be able to give part of their time to the station.

EXPENDITURE OF THE STATION FUND.

The bill expressly provides that no part of the fund appropriated shall be used for any purpose other than equipping and supporting an establishment for carrying on experimental work. While the stations may be attached to the agricultural colleges and be made departments of the same, no part of this fund may be used in support of the colleges, except in experimental work.

ADVANTAGE TO COLLEGE.

Financially, the station will not be of direct benefit to the College. To compensate the College, however, for the use of property assigned to the work of the station, such work will add largely to the ability of the College to impart more thorough instruction in scientific and practical agriculture. College students will be employed in the work of the station to as great an extent as may be found practicable, and the plant of the station, and experimental work in progress, will increase the means of illustration of the College and be of special advantage to the students in providing practice and training in agricultural work, under skilled instructors. The Station will not add to the expenses of the College in any way, as such time as may be given by professors or other employes in experimental work will be paid for from the Station fund, and the value of the time lost to the College deducted from the salary that would be paid by the College if the entire time was given to College work; and in order not to impair the efficiency of instruction the board has provided for additional instructors to relieve the professors of a portion of their class work.

The Board of Directors of the College desire to make the work of the Station of as much value to the agricultural interests of the State as may be possible. The work will be conducted at all times with special reference to giving information that may be of some practical use to the farmer. To enable them to carry out this policy, all associations having the advancement of agriculture in view—the Grange, Alliance, associations of stock breeders, or fruit growers, or other organizations—will be invited from time to time to appoint delegates to meet with the board of directors and officers of the Station, and consult and advise with them in regard to the work of the Station. Suggestions will be gladly received at all times from any one who is interested in advancing the agricultural interests of the State.

ORGANIZATION.

In accordance with the act of Congress, the Board of Directors of the Agricultural and Mechanical College of Texas, at a meeting held January 25, 1888, established the Experiment Station as a department of the College. Provision was made for assigning to the Station department such part of the College farm, buildings and other equipment of the College as would be found necessary to prosecute the work, in addition to the outfit supplied from the funds of the station.

The director of the Station will have general supervision of all experimental work, correspondence and publication of bulletins and reports.

The professors of Agriculture, Chemistry, Horticulture, Physics and Veterinary Science will have charge of Station work in their several departments.

Austin Hall. Ross Hall. Main Building. Pfeuffer Hall.

EIGHTEENTH ANNUAL CATALOGUE

OF THE

AGRICULTURAL AND MECHANICAL COLLEGE

OF TEXAS.

SESSION 1893-94.

RAILROAD DEPOT, EXPRESS AND MONEY ORDER OFFICE,

COLLEGE STATION, TEXAS.

AUSTIN:
BEN C. JONES & CO., STATE PRINTERS.
1894.

CALENDAR

1894.

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CALENDAR
1895.

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28	29	30	31	..	..	..
..	..	..	..	..	..	..

AUGUST.

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..	..	..	..	..	..	..

SEPTEMBER.

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	..	..	..	..	..
..	..	..	..	..	..	..

OCTOBER.

S	M	T	W	T	F	S
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
..	..	..	..	..	..	..

NOVEMBER.

S	M	T	W	T	F	S
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
..	..	..	..	..	..	..

DECEMBER.

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
..	..	..	..	..	..	..

CALENDAR.

1894.

Fall Term begins Wednesday, September 12.
Anniversary Austin Society, November 15.
National Holiday, Thanksgiving Day.
Christmas Holiday, December 21 to January 2, 1894.

1895.

Winter Term begins Thursday, January 3, 1895.
National Holiday, February 22.
Spring Term begins March 12.
Anniversary Calliopean Society, March 16.
State Holiday, April 21.
Final Examinations begin June 3.
Commencement Sunday, June 9.
Exhibition of Departments and work of Students, June 10.
Commencement Day, June 11.

BOARD OF DIRECTORS.

The government of this College is vested in a Board of Directors, consisting of five members, appointed by the Governor of the State. They are "selected from different sections of the State, and hold office for six years, or during good behavior, and until their successors are qualified."

HON. A. J. ROSE, President ..... Salado
HON. W. R. CAVITT ..... Bryan
HON. JOHN E. HOLLINGSWORTH, Commissioner of Insurance, Statistics, History, and Agriculture, *ex-officio* ..... Austin
DR. J. D. FIELDS ..... Manor
HON. JOHN ADRIANCE ..... Columbia

The Board of Directors of the College are also the governing Board of the Experiment Station.

FACULTY AND OTHER OFFICERS.

L. S. ROSS, PRESIDENT.

R. H. WHITLOCK, M. E.,
Professor of Mechanical Engineering.

H. H. HARRINGTON, M. S.,
Professor of Chemistry and Mineralogy.
(Chemist to Experiment Station.)

CHARLES PURYEAR, M. A., C. E.,
Professor of Mathematics.

MARK FRANCIS, D. V. M.,
Professor of Veterinary Science.
(Veterinarian to Experiment Station.)

LIEUT. BENJ. C. MORSE, 18TH INFANTRY, U. S. ARMY,
Professor of Military Science and Commandant of Cadets.

F. E. GIESECKE, M. E.,
Professor of Drawing.

J. C. NAGLE, M. A., C. E., M. C. E.,
Professor of Civil Engineering and Physics.

R. H. PRICE, B. S.,
Professor of Horticulture, Botany, and Entomology.
(Horticulturist to Experiment Station.)

T. C. BITTLE, A. M., PH. D.,
Professor of Languages.

J. H. CONNELL, M. Sc.,
Professor of Agriculture.
(Director of Experiment Station.)

C. W. HUTSON,
Professor of English and History.

ROBERT F. SMITH,
Associate Professor of Mathematics.

DUNCAN ADRIANCE, M. S.,
Associate Professor of Chemistry.

W. B. PHILPOTT, M. S.,
Associate Professor of English and History.

JAMES CLAYTON,
Associate Professor of Agriculture.
(Agriculturist of Experiment Station.)

A. L. BANKS, B. S.,
Adjunct Professor of Mathematics.

P. S. TILSON, M. S.,
Assistant Professor of Chemistry.
(Assistant to Station Chemist.)

H. NESS, B. S.,
Assistant Professor of Horticulture and Botany.

J. M. CARSON, B. S.,
Assistant Professor of Agriculture.
(Assistant to Experiment Station Agriculturist.)

D. W. SPENCE, B. Sc., C. E.,
Assistant Professor of Civil Engineering and Physics, and Drawing.

Rev. W. S. RED, A. B.,
Chaplain, Librarian, and Assistant Professor of English.

R. T. BRAY, M. E., C. E.,
Assistant Professor of Mechanical Engineering.

PROFESSOR PURYEAR,
Secretary of the Faculty.

A. C. GILLESPIE, M. D.,
Surgeon.

JOHN H. CARTER,
Secretary.

E. W. HUTCHINSON, B. C. E.,
Bookkeeper.

B. SBISA,
Steward.

C. A. LEWIS,
Foreman of the Carpenter Shop.

J. B. WATTS,
Stockman.

J. W. CARSON, B. S.,
Foreman of the Farm.
(Assistant to Director of Experiment Station.)

G. EBERSPACHER,
Florist.

MAIN BUILDING. ROSS HALL.

Side view.

CATALOGUE OF STUDENTS.

EXPLANATION.

M. S., Master of Science. B. M. E., Bachelor of Mechanical Engineering. B. S. A., Bachelor of Scientific Agriculture. B. C. E., Bachelor of Civil Engineering. M., Mechanical Course. B. S. H., Bachelor of Scientific Horticulture. A., Agricultural Course.

GRADUATES.

Names.	Degree.	Postoffice.
A. L. Banks, B. S.	M. S.	College Station.
Dan Cushing, B. M. E.	Special	Houston.
L. L. Lewis, B. S. A.	M. S.	Rhea's Mills.

FIRST CLASS.

Names.	Course.	Postoffice.
Abbott, E. G.	B. C. E.	Hillsboro.
Bruce, E. L.	B. C. E.	Mineola.
Bocock, J. H.	B. S. A.	Lynchburg, Va.
Bittle, W. A.	B. S. A.	College Station.
Dazey, W. L.	B. C. E.	Fort Worth.
Ellis, Fort O.	B. C. E.	Harrisonburg, La.
Ferguson, A. M.	B. S. H.	Belton.
Fowler, E. R.	B. C. E.	Palestine.
Gilbert, J.	B. S. A.	Hornsby.
Houston, F. N.	B. C. E.	Holland.
Howell, J. Webb	B. S. A.	Bryan.
Japhet, G.	B. M. E.	Houston.
Jonas, E. C.	B. C. E.	San Antonio.
Jahn, F. C.	B. S. H.	Gonzales.
Kell, E.	B. M. E.	New Orleans, La.
Lewis, F.	B. C. E.	Forney.
Luckett, W. M.	B. M. E.	Bastrop.
McDonald, H. F.	B. M. E.	McKinney.
Massenburg, W. G.	B. C. E.	Paris.
Myers, W. G.	B. M. E.	Meridian, Miss.
Mitchell, A.	B. C. E.	Campbell.
Oglesby, G. B.	B. C. E.	Cedar Mills.
Pittuck, B. C.	B. S. A.	Dallas.
Peters, F.	B. M. E.	DeKalb.
Roddy, S. R.	B. C. E.	Roddy.

Names.	Course.	Postoffice.
Ross, Frank R.	B. S. A.	College Station.
Rose, W. F.	B. M. E.	Schulenburg.
Ross, J. G.	B. C. E.	Cold Springs.
Speer, R. H.	B. C. E.	Fort Worth.
Staples, C. M.	B. C. E.	Houston.
Sewell, M. S.	B. C. E.	McGregor.
Smither, R.	B. M. E.	Huntsville.
Schmidt, D.	B. C. E.	Waco.
Todd, A. M.	B. C. E.	Jefferson.

SECOND CLASS.

Amthor, Walter	B. C. E.	McGregor.
Anderson, O. T.	B. M. E.	Morris Ranch.
Abbott, J. S.	B. C. E.	Hillsboro.
Adams, A. S.	B. C. E.	Bryan.
Brown, L.	B. S. A.	Groesbeeck.
Belden, S. A.	B. C. E.	Brownsville.
Burgoon, C. E.	B. M. E.	Estelle.
Blount, L.	B. S. A.	San Augustine.
Burleson, R. W.	B. M. E.	San Saba.
Bittle, P. B.	B. S. A.	College Station.
Bloor, A. W.	B. S. A.	Manor.
Cartwright, L.	B. S. A.	Terrell.
Cartwright, L.	B. S. A.	San Augustine.
Clark, Hines	B. S. A.	El Paso.
Coulter, H.	B. S. H.	Bryan.
Coulter, W.	B. M. E.	Bryan.
Duggan, A. P.	B. C. E.	San Saba.
Dinwiddie, Robert	B. S. H.	Austin.
Eberspacher, Geo.	B. M. E.	College Station.
Eddins, M. E.	B. M. E.	Stranger.
Fitzgerald, W. H.	B. S. A.	Shiner.
Fitzgerald, A. H.	B. S. A.	Shiner.
Fitzgerald, B. S.	B. M. E.	Houston.
Farmer, A. G.	B. M. E.	Junction City.
Gillespie, A. M.	B. S. A.	Houston.
Holman, J. R.	B. C. E.	Comanche.
Hutson, W. F.	B. S. A.	College Station.
Jordan, H. P.	B. C. E.	Beaumont.
Lowry, F. A.	B. S. H.	Bryan.
Law, F. M., Jr.	B. S. A.	Bryan.
Martin, F. L.	B. C. E.	New Orleans, La.
Martin, H. B.	B. M. E.	Marlin.
Moore, W. M.	B. C. E.	McKinney.
Mouser, E. B.	B. S. A.	Reinhardt.
McMillan, M.	B. M. E.	Boerne.

Names.	Course.	Postoffice.
Mills, P. P.	B. C. E.	Waco.
Moursund, A. F.	B. C. E.	Fredericksburg.
Mayes, R. H.	B. S. A.	Oakwoods.
McNeill, J. C.	B. C. E.	Brazoria.
Meriwether, G. B.	B. C. E.	Pearsall.
Orr, W. P.	B. M. E.	Sandy Point.
Oltorf, C. A.	B. C. E.	Marlin.
Perlitz, C. A.	B. M. E.	Schulenburg.
Polk, W. A., Jr.	B. C. E.	Corsicana.
Peden, D. D.	B. M. E.	Houston.
Roberts, Felix	B. S. A.	Terrell.
Ross, J. A.	B. C. E.	Rossville.
Smith, A. U.	B. M. E.	Huntsville.
Stedman, G.	B. S. A.	Houston.
Trimble, Elmo	B. C. E.	Dallas.
Wells, D. D.	B. S. A.	Weatherford.
Wight, A. T.	B. C. E.	Roxton.
Wells, G. A.	B. M. E.	Chetopka, Kas.
White, G. R.	B. C. E.	Brady.
Ward, R. M.	B. S. A.	San Saba.
Watkins, R. C.	B. C. E.	Bryan.

THIRD CLASS.

Anglin, W. A.	M.	Groesbeeck.
Armstrong, R. A.	A.	Wharton.
Allman, C. N.	M.	Brownwood.
Brothers, B. J.	A.	Slayden.
Barnette, Robert P.	A.	Lone Oak.
Burney, J. W.	M.	Kerrville.
Blount, J. F.	M.	San Augustine.
Blount, L.	M.	San Augustine.
Bass, M. J.	M.	San Antonio.
Buchanan, J.	M.	Hallettsville.
Ball, A. W.	M.	McKavett.
Brock, F. A.	M.	Galveston.
Bruns, C.	M.	Oquin.
Beasley, S. D.	M.	Campbell.
Close, Major	M.	Hempstead.
Cook, C. G.	M.	Weimar.
Carson, C. W.	A.	Sherwood.
Cohn, Sam	M.	Quanah.
Caven, David	A.	Dallas.
Chiles, H. T.	A.	Pottsboro.
Chiles, W. B.	A.	Pottsboro.
Carson, A. B.	M.	College Station.
Dreibholz, F.	A.	Ramos, La.

Names.	Course.	Postoffice.
Dirr, Frank A	M.	Calvert.
Duff, J. E	M.	Brazoria.
D'Echeaux, H	M.	Gibson, La.
Dechman, E. S	M.	Waxahachie.
Dowell, Willis	M.	McKinney.
De Stefano, A	A.	Dallas.
Daugherty, B. C	A.	Prairie Lea.
Eichelberger, Wm	A.	China Springs.
Engel, O	A.	Bluff.
Frye, W. B	M.	Dublin.
Finney, C. B	M.	Lometa.
Goldberg, I. L	A.	Jefferson.
Gerstemann, O	M.	Houston.
Gilmore, H. A	M.	Burnet.
Gross, A	M.	Lampasas.
Goldberg, J. L	A.	Jefferson.
Hildebrandt, A. M	A.	College Station.
Hill, Robert	M.	Eastland.
Hutson, H. L	M.	College Station.
Hutchinson, W. F	M.	Antelope.
Hathern, A. V	M.	Gainesville.
Hairston, T. C	A.	Independence.
Holman, Ned	M.	Comanche.
Johnston, Hugh	M.	Ardmore, I. T.
Kerr, J. W	M.	Corsicana.
Krug, W. H	A.	Brenham.
Kerr, E. W	M.	Vineland.
Kyle, H. C	A.	Nursery.
Keaghey, T. C	M.	Jasper.
Loper, C. A	A.	Waxahachie.
Ligon, W. L	A.	Fort Worth.
Littlefield, G. T	M.	Austin.
Lacey, Walter	M.	Waco.
Miller, C. R	M.	Franklin.
Miley, J. H	M.	Rockdale.
Morse, H. A	A.	Los Angeles, Cal.
Mathews, W. N	M.	Austin.
McCollum, Willie	M.	Waco.
McFarland, H	A.	Cleburne.
Meyer, Theo	M.	Austin.
Muller, F. W	M.	Galveston.
Nooner, Lee	M.	Hempstead.
O'Bryant, S. O	M.	Utopia.
Oliver, T. F	A.	Groesbeeck.
Ohlin, H. C	A.	Houston.
Park, C. M	M.	Dallas.
Powell, Joe	M.	Hubbard City.

PRESIDENT'S HOUSE.

Names.	Course.	Postoffice.
Porter, W. K	M.	Yegua.
Peyton, J. W	M.	Rockwall.
Peyton, J. R	M.	Tyler.
Pidcocke, R. H	M.	Waco.
Porter, R. R	M.	Yegua.
Perkins, F. D	M.	McKinney.
Post, S. J	M.	Anderson.
Rose, A. J	M.	Salado.
Rhodes, S. E	M.	Bryan.
Reed, John	M.	Battle. [Mexico.
Rodriguez, D	M.	C. Porfirio Diaz,
Rosenthal, H. H	M.	Jefferson.
Scherer, Clinton	M.	Anahuac.
Seward, I. R	M.	Independence.
Sherwood, H. J	M.	Brownsville.
Sanders, W. O	A.	Iola.
Smith, Geo	M.	Bryan.
Shelton, D. B	M.	Roxton. [Ark.
Snow, L. N	A.	New Lewisville,
Sims, M. W	A.	Bryan.
Stasny, John	A.	College Station.
Stedman, Jerry	A.	Houston.
Smith, Sterling	M.	Brenham.
Traylor, Paul	A.	Dallas.
Valdez, N	M.	Hidalgo, Mexico.
Vinther, F	M.	Cresson.
Watts, Arthur	A.	Dallas.
Wilcox, S. E	M.	Georgetown.
Wilkins, W	M.	Brenham.
Wisdom, F. L	M.	Texarkana.

FOURTH CLASS.

Ahrenbeck, B	Navasota.
Ahrenbeck, C. C	Navasota.
Anderson, B. M	Washington, La.
Atkinson, H. N	Waco.
Burrow, S. G	Groesbeeck.
Bartlett, J. H	Columbia.
Bergeron, Geo	Calvert.
Bedwell, R. H	Waco.
Bittle, F. D	College Station.
Bennett, C. S	Columbia.
Baker, J. W	Files.
Beall, J. H	Colorado City.
Cunningham, H	Waco.
Carstanjon, R	Boerne.

Names.	Postoffice.
Caswell, G. W	Beaumont.
Couch, E	Forrestor.
Crook, M. P	Hempstead.
Clay, Shepard	Independence.
Clay, Finney	Independence.
Donaho, M. B	Utopia.
Devlin, Peter	Galveston.
Dorsett, J. S	Bonham.
Davis, J. T	Mooresville.
Davis, S	Mooresville.
Davis, James	Groesbeeck.
Derden, S. M	Bryan.
Davis, Harry	Houston.
Dunlap, F. S	Waxahachie.
Davis, Charles	Algiers, La.
Davelin, C	Battle.
Dodson, Elmer	Bryan.
Dunham, A. B	Grapeland.
Easter, Thomas	Franklin.
Earle, M. M	Waco.
Ector, M. D	New Boston.
Eldridge, Harry	Brenham.
Finucane, T. H	San Antonio.
Faust, Walter	New Braunfels.
Feagin, J. U	Merrivale.
Forres, H	Schulenburg.
Glass, Crawford	New Boston.
Goodrich, N. W	Waco.
Garland, J. P	Waco.
Gause, R. B	Gause.
Graham, O	Denton.
Graham, Carl	Jefferson.
Gay, W. B	Montgomery.
Houston, H. L	Holland.
Hayden, F. A	Pilot Point.
Haven, L. J	Gonzales.
Hyatt, P. F	Beaumont.
Harris, L	Bonner.
Haven, Wm. F	Denison.
Hebert, L. J	Beaumont.
Hynson, Harry	Texarkana.
Henderson, Emmet	Calvert.
Juneman, C. F	Galveston.
Jackson, Terrell	Felder.
Jones, Willie	Franklin.
Jahn, B. A	Gonzales.
Jahn, A. R	Gonzales.

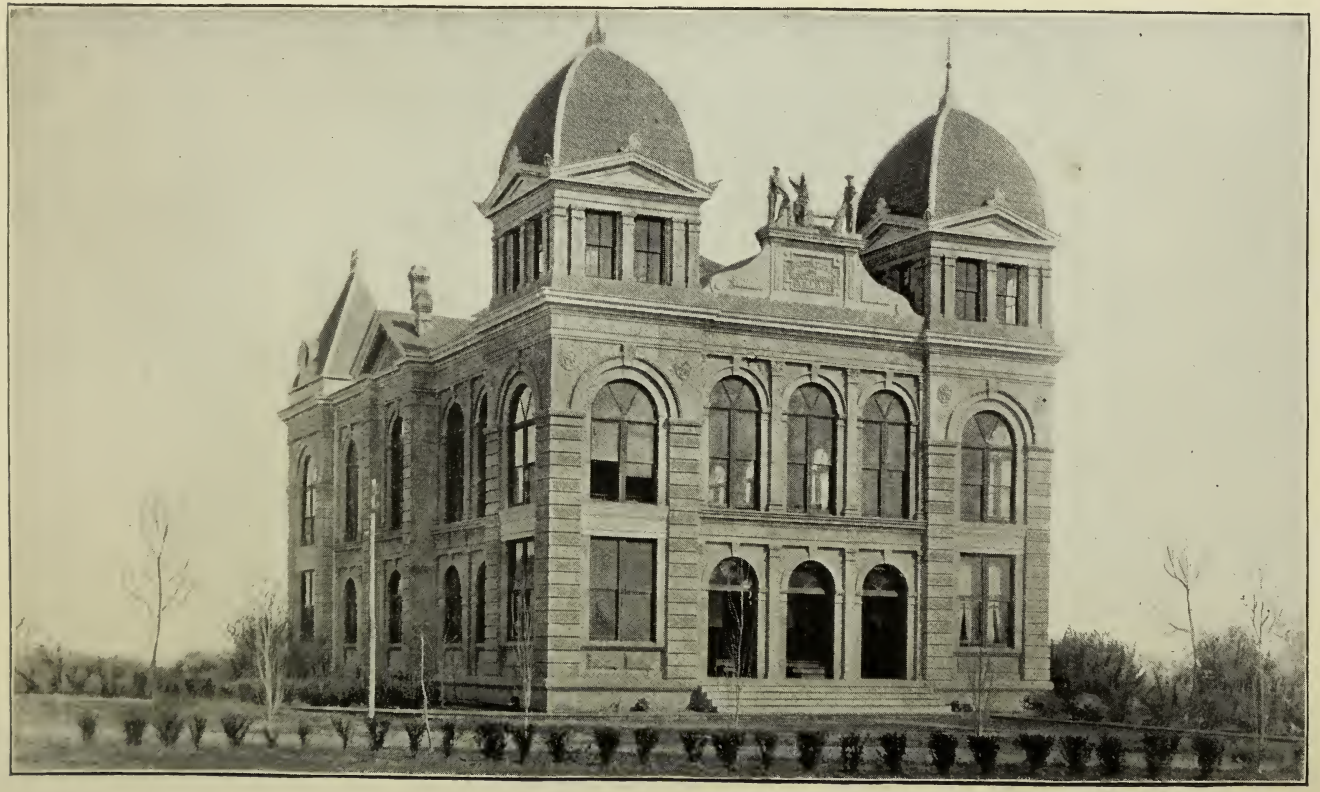
Names.	Postoffice.
Jones, R. H.	Waco.
Knolle, O. J.	Industry.
Kellogg, S. J.	Franklin.
Kelly, Chas.	Ledbetter.
Kyle, Albert	Kyle.
Kilner, A. W.	Dallas.
Kistenmacher, G.	Jefferson.
Koppe, Wm.	Bryan.
Kunz, O	Austin.
Keaghey, G. S.	Jasper.
Keller, John.	Dallas.
Levy, Joe.	Marlin.
Leigh, A. P.	Huntsville.
Leary, Ross.	Milford.
Middlebrook, P.	Columbus.
McDonald, H.	Palestine.
Moore, T. A.	Hookerville.
Moore, Robert	Austin.
Miller, G. W.	Palmer.
Orive, P.	Brownsville.
O'Riardan, E.	Independence.
Pettus, T. W.	Goliad.
Post, A. J.	Anderson.
Putz, Frank.	College Station.
Reed, J. E.	Goliad.
Ricks, F. T.	Round Rock.
Reiler, C.	Houston.
Rowe, F. L.	Plano.
Ransom, Lane	Waxahachie.
Rhoads, R. J.	Dallas.
Smith, E. G.	Denton.
Shires, Geo.	Coalgate, I. T.
Shires, Frank.	Coalgate, I. T.
Steward, C. B.	Steward's Mills.
Spears, Jas. C.	San Angelo.
Schwartz, J	Hempstead.
Splane, P. E.	Washington, La.
Sternenberg, E. H.	Industry.
Stewart, A. W.	Palestine.
Stewart, C. R.	Palestine.
Salyer, J. H.	Georgetown.
Salyer, J. M.	Georgetown.
Searcy, Shelby	Temple.
Smith, W. T.	Montgomery.
Sterns, Geo.	Houston.
Sampson, J. M.	Cameron.
Tucker, Arthur	Kilgore.

Names.	Postoffice.
Terry, R. S.	Jefferson.
Tilson, H. R.	Texarkana.
Thomas, Norman	Alvin.
Taylor, Jas.	Bryan.
Ueckert, H. H.	Reinhardt.
Uzzell, W.	Manvel.
Vezien, C.	Algiers, La.
Woodward, H. J.	Antelope.
Winter, P.	Bryan.
Webb, G.	Albany.
Woods, J. K.	Comstock.
Witte, W.	Shelby.

SUMMARY.

Graduates	3
First class	34
Second class	56
Third class	100
Fourth class	120
Total	313

It is the policy of the College authorities to restrict the number of cadets as far as possible to two in each room. While this policy lessens the number of matriculates, its wisdom has been fully demonstrated by an increased proficiency and satisfaction in all classes.



ASSEMBLY HALL.

BATTALION ORGANIZATION.

B. C. Morse, First Lieutenant Eighteenth Infantry, Commandant of Cadets.

CAPTAINS.

Co. A.	*Co. B.*	*Co. C.*	*Co. D.*
F. N. Houston,[1]	J. Gilbert,[2]	E. C. Jonas,[3]	A. M. Todd.[4]

Commissioned Staff

- First Lieutenant and Adjutant, B. C. Pittuck,
- First Lieutenant and Quartermaster, F. R. Ross.
- First Lieutenant and Private Secretary, A. W. Bittle.

FIRST LIEUTENANTS.

W. L. Dazey,[3]	F. Lewis,[2]	E. Kell,[1]	F. O. Ellis,[4]

SECOND LIEUTENANTS.

A. Mitchell,[2]	W. M. Luckett,[4]	W. G. Massenburg,[1]	W. G. Myers,[3]
J. W. Howell,[9]	E. G. Abbott,[7]	W. F. Rose,[6]	R. F. Peters,[5]
G. Japhet,[12]	E. L. Bruce,[11]	F. C. Jahn,[10]	J. G. Ross.[8]

Non-Commissioned Staff

- Sergeant Major, H. T. Coulter.
- Quartermaster Sergeant, H. P. Jordan.
- Sergeant and Battalion Clerk, W. A. Polk.

FIRST SERGEANTS.

P. P. Mills,[1]	A. U. Smith,[3]	M. B. McMillan,[4]	G. B. Meriwether.[2]

SERGEANTS.

H. B. Martin,[5]	P. B. Bittle,[2]	C. E. Burgoon,[6]	O. T. Anderson,[1]
J. A. Ross,[10]	A. P. Duggan,[3]	G. R. White,[12]	A. G. Farmer,[7]
R. C. Watkins,[11]	E. B. Mouser,[4]	R. H. Mayes,[15]	A. F. Moursund.[9]
F. M. Law,[19]	D. D. Peden,[8]	R. L. Dinwiddie,[18]	H. Clark.[14]
	A. W. Bloor,[13]	W. M. Moore,[19]	

CORPORALS.

A. Gross,[1]	A. P. Watts,[9]	W. R. Dowell,[6]	A. W. Ball,[2]
A. De Stephano,[3]	M. J. Bass,[12]	C. M. Close,[7]	C. F. Bruns,[4]
W. O. Saunders,[10]	W. F. Hutchinson,[15]	H. H. Rosenthal,[11]	H. A. Gilmore,[5]
T. P. Meyer,[14]	E. W. Kerr,[17]	R. R. Porter,[13]	I. L. Goldberg,[8]
C. M. Park,[16]	T. F. Oliver,[20]		W. Krug,[18]
J. W. Burney,[21]			A. J. Rose.[19]

DEGREES AND HONORS

Conferred at Commencement, June, 1893.

DEGREE OF B. S. A.

J. W. Hawkins, O. D. Hutchinson, L. L. Lewis, J. H. O'Bar, J. L. Short, W. D. Watson.

DEGREE OF B. S. H.

B. C. Parsons.

DEGREE OF B. M. E.

T. M. Kyle.

DEGREE OF B. C. E.

W. H. Mitchell, H. A. Pearson, W. E. Perlitz, H. M. Pike, C. W. Rollins, Jos. Weidel, W. Wilson.

GENERAL HONOR MEN BY CLASSES 1892-93.

First Class—Hawkins, Lewis, Weidel.
Second Class—Pendleton, Pittuck, Oglesby.
Third Class—Flinn, Meriwether, Coulter, H.
Fourth Class—Hildebrandt, Ball, Engel.

HONOR MEN BY DEPARTMENTS.

FIRST CLASS.

Agriculture—Hawkins, Lewis, Hutchinson, Watson.
Chemistry—Hawkins, Lewis, O'Bar.
Civil Engineering—Weidel, Pearson, Rike.
Drawing—Weidel, Pearson, Perlitz, Rike.
English—Lewis, Mitchell, Parsons.
Horticulture—Lewis, Hawkins, Hutchinson.
Languages—Rike, Perlitz, Weidel.
Mathematics—{ Agricultural Course—Hawkins, Short, Lewis.
Mechanical Course—Weidel, Rike, Pearson.
Mechanical Engineering—Kyle.
Military Science—Mitchell, Hawkins, Pearson.
Veterinary Science—Lewis, O'Bar, Hutchinson.

Mess Hall.

SECOND CLASS.

Agriculture—Pendleton, Pittuck, Howell.
Chemistry—Howell, Oglesby, Pendleton.
Civil Engineering—{ Civil Engineering Course—Oglesby, Uhl, Dazey. / A. and M. Courses—Pendleton, Peters, Pittuck, Rose.
Drawing—Dazey, Lewis, Oglesby.
English—Pittuck, Dayton, Fowler.
Horticulture—Howell, Jahn, Ferguson.
Languages—Abbott, Jonas, Mitchell.
Mathematics—Uhl, Pendleton, Oglesby.
Mechanical Engineering—Meyers, Kell, Rose.
Military Science—Houston, Ross, F., Oglesby.
Veterinary Science—Bittle, A., Pendleton, Gilbert.

THIRD CLASS.

Agriculture—Coulter, Flinn, Impkin, Outz.
Civil Engineering—Flinn, McMillan, Wells, G.
Drawing—{ Agricultural Course—Calvert, Bloor, Blount, S. / Mechanical Course—Peden, Meriwether, Baumgarten.
English—Flinn, Duggan, McMillan.
Horticulture—Coulter, Flinn, Mayes.
Mathematics—Woods, Meriwether, Moursund.
Mechanical Engineering—Meriwether, Wells, Burgoon.
Veterinary Science—Blount, Coulter, Flinn.

FOURTH CLASS.

Agriculture—Dirr, Rosenthal, Hildebrandt.
Drawing—Meyer, Close, Hill.
English—Hildebrandt, Mathews, Gross.
Mathematics—Ball, Dirr, Rosenthal.
Mechanical Engineering—Sherwood, Ball, Porter.

COMMENCEMENT EXERCISES.

June 4, 5 and 6, 1893.

PROGRAMME.

Sunday, June 4.

11 a. m. Commencement sermon by Rev. Wm. Wilson De Hart, of Waco, Texas.

Monday, June 5.

10 a. m. Joint celebration of societies.

3 to 5 p. m. Inspection of departments, including exhibition of stock, apparatus and appliances for instruction; display of products of students' work; students at work.

5:30 p. m. Infantry drill preceded by review of the battalion.

8:15 p. m. Annual reunion of the alumni.

Tuesday, June 6—Commencement Day.

8 to 9 a. m. Target practice by members of the graduating class.

10 a. m. Reading of theses by students most distinguished in the several courses of study.

Commencement address by Judge J. H. McLeary, of San Antonio, Texas.

Delivery of Medals.

Valedictory address: Willett Wilson, Avalon, Texas (elected by the first class).

Response to the valedictory: B. C. Pittuck, Dallas, Texas (elected by the second class).

Announcement of students distinguished in the several departments and classes.

Delivery of diplomas and conferring of degrees by the president of the board.

5 p. m. Company drill.

6:30 p. m. Graduating dress parade. Announcement of promotions.

ASSEMBLY HALL. PROFESSORS' DWELLINGS.

GRADUATING CLASS.

With Subjects of Theses.

J. W. Hawkins, Halletsville.....Cotton Seed and its Products.
O. D. Hutchinson, Jacksboro.....Tile Drainage.
T. M. Kyle, Nursery.....Review of the Upright N. Y. Safety Steam Engine.
L. L. Lewis, Rhea's Mill.....Southern Feed Stuffs.
W. H. Mitchell, Youngsport.....Design for a Railway Through Bridge 120 foot Span.
J. H. O'Bar, Warrenton.....Biology of the Cattle Tick.
B. C. Parsons, Kerrville.....Black Rot, Downy Mildew, and Powdery Mildew of the Grape.
H. A. Pearson, Baileyville.....Design for an Overhead Railway Bridge, 80 foot Span.
W. E. Perlitz, Schulenburg.....Design for a Single Track Pratt Truss.
C. W. Rollins, Merit.....Design for a Highway Bridge, 120 ft. Span.
H. M. Rike, Haskell.....Design for a Single Intersection Through Bridge.
J. L. Short, Seguin.....Texas Cattle Fever.
W. D. Watson, Bryan.....Cheese Making.
J. Weidel, San Antonio.....Design for a Six Panel Deck Span.
W. Wilson, Avalon.....Design for a Through Highway Bridge, 16 foot Roadway.

OBJECTS AND PRESENT POLICY.

The act of Congress which established the State Agricultural and Mechanical Colleges defines their objects, but under the act there have been founded as many different schools as there are States. These institutions have presented a variety of educational schemes, which have embraced nearly all gradations from the classical and mathematical college to the manual labor industrial school. In view of this fact, it is proper to state as definitely as possible the interpretation given to the act of Congress by the authorities of this college, and the manner in which they are endeavoring to carry out its provisions.

The general object of this college is to excite and foster in the minds of our people an enthusiastic appreciation of the attractiveness and value

of those pursuits by which the material development of the country is advanced.

It proposes to equip boys for their future career by the fullest development of their powers with reference to the wants of life, and acquaint them thoroughly, both theoretically and practically, with the duty, the dignity and the nobility of labor. There is a great field opening in our State for practical technical employment and a growing demand for the services of those fitted for labor in every branch of scientific knowledge, and we are now compelled to draw upon the skilled labor of other countries to fill the most lucrative, honorable and important positions in every industrial enterprise. In face of this fact, there can be no exaggeration of the value of an institution which will afford the direct advantage of conducting the student from the simplest mechanical principles to the complex order of artistic ingenuity by enabling him to combine principles, construct models and call into activity his ingenuity for designing; while a practical knowledge of the use of tools can be acquired in one-half the time necessary under the ordinary methods of obtaining a trade knowledge as an apprentice, kept at such work only as proves most profitable to the employer.

Agriculture in our country is the admitted basis of public wealth, and we must look to it as the chief source of our prosperity. The machinery of a prosperous agriculture once put in motion brings in its train a vast number of other public enterprises, creating new demands for skilled workmanship, and the skillful hand gives dignity to these pursuits and places a higher estimate upon their value.

Instruction in agriculture and horticulture; how to plant, tend, harvest and store the products of farm and garden; how to care for all the various kinds of stock found on well regulated farms, will inculcate a taste for these pursuits, and induce the young men to seek employment in the country, to the development of a self-reliant manhood, instead of wasting their lives, as is frequently the case, in the overcrowded professional ranks in the cities, by being educated into a fitness for such employments only as require an abstract mental training, and ignoring altogether that which is practical. The young men of the State can acquire at this institution a knowledge that will prepare them to achieve the highest and best results in any station, through the reliable factors of education, industry and a proper moral instruction by the application of plain moral precepts to every act of life.

In addition to this, the military feature of the college is of undoubted importance, though probably not fully appreciated. The arguments in its favor are numerous; but far in advance of all others, and what is sufficiently important to at once decide the matter, is its conduciveness to health. The outdoor exercise, the erect position and expanding chest,

GREENHOUSE.

give the lungs a free play so essential after the cramped position necessary to the school room; the pleasurable excitement accompanying the drill, the strictness of attention required to secure precision and accuracy of movement in performing the evolutions, are highly conducive to bodily health, grace and strength, and perform a very active part also in the inculcation of habits of promptness, regularity and order, and aid materially in preserving a proper discipline.

It is the business of this college to turn the attention of our young men from the overcrowded "learned professions" to those occupations which have brought abundant wealth and power to other States, and which are beginning now to attract and will repay the services of trained young men in Texas.

These objects are sought to be obtained :

By a thorough course of instruction in all practical and useful branches of knowledge, with continual application of principles to work in the shops, fields, gardens, vineyards, orchards, pastures, dairies and other laboratories.

By relying upon text books as little as possible and leading the students to seek information directly from observation and experiment.

By inculcating the dignity of intelligent labor—banishing the idea that the farmer or mechanic who is worthy of the name need be any less learned than the professional man.

By inducing in the mind of the student an enthusiastic love of nature and the study of natural laws, whereby agricultural and mechanical processes become invested with absorbing interest, and are pursued in a spirit which leads to progress and success.

It will thus be seen that the authorities of this school adhere to the interpretation of the act founding it, which has been given by the author of this act, and which has been adopted by all the successful colleges of similar origin, namely: That this college is not a trade school, designed to take the place of the old apprenticeship system, but an institution where young men may receive broad and liberal training in all those sciences and arts which contribute to useful citizenship in the pursuit of all productive industries.

METHODS AND SCOPE OF INSTRUCTION.

The courses of instruction cover all that is comprised in the curricula of the best institutions of our times, except the ancient languages. The time usually devoted to these is here given to the application of the principles in the fields, shops and laboratories. Mere text book study is regarded as comparatively of little value unless supplemented by intelligent practice in applied science.

EXPERIMENTAL WORK.

This furnishes the chief means of training students in accordance with this view, and hence a most important subsidiary object of this institution is the discovery and dissemination of all sorts of information with regard to industrial pursuits.

The recent action of Congress in setting aside $15,000 per annum for the establishment and maintenance of agricultural experimental stations in the several States will in a short time place at the disposal of the college the means for efficient experimental work, and offer to students the great advantages of observation and participation in researches which promise important results for the benefit of the whole country. The Agricultural Experimental Station has been established at the college as one of its departments, and students in the agricultural course will hereafter assist in the work of the station.

LABOR.

All students are required to perform a certain number of hours of practical work in the field or shops, as shown below under Course of Study. In the Agricultural and Horticultural Departments, all work is paid for in proportion to the character and value thereof, at a rate not to exceed fifteen cents per hour. In the Mechanical Engineering and Civil Engineering Departments, work may or may not be paid for, according to its character. When possible, students will have an opportunity to perform extra voluntary labor in order that they may still further aid in paying their way through college.

MILITARY INSTRUCTION.

This is embraced by law in the objects of the college, and will be given such attention as is necessary for an honest compliance with the act of Congress.

NATATORIUM. (*Completed April, 1894.*)

MARKS, EXAMINATIONS, AND ADVANCEMENT.

Records of the standing of each student are kept by the professors of the several departments. This standing is indicated by a system of marks based upon 100 as a maximum, with decimal gradations.

A monthly report is mailed to the parent or guardian of each student, showing his class standing, conduct and health.

Examinations are held from time to time during the session as special subjects of study may be completed, and at the end of the session upon the general course. The results of these, combined with the daily recitation marks, determine the final standing of the student.

Students of the Third and Fourth Classes, who attain an average monthly mark of 85 or over, may, at their option, be excused from the class examination. Students of the Second Class must attain an average mark of 90, or over, and students of the First Class an average of 95, or over, to be so excused: Provided, that when a subject is taught by lectures, or if for any other reason the instructor is not satisfied with a student's monthly mark, such student may be required to stand the examination. If a student is absent from as many as one-tenth of the entire number of recitations on any study, he must stand the examination with his class.

A student's final grade is determined by averaging his term grade, if any, with his examination grade, if any, and must be at least 66 in order to pass; provided that neither the term grade nor the examination grade is below 55.

In subjects where no examination is given, a student's grade must be 66, or over, and he must complete a certain amount of practice or work prescribed by the professor in charge, in order to pass.

A student who is deficient in any study will be given a second examination, but must make a grade of at least 66 thereon, in order to pass. This second examination will not affect his class stand. A student shall not be given more than two examinations on any subject, but this regulation shall not debar him from an entrance examination at the beginning of the next session. A student shall not be allowed to pass from one class to the next if he is deficient on more than two subjects of the lower class. But no student shall be admitted to the First Class with any conditions still unremoved. A student entering a class conditioned may remove such condition by making 66 on an examination at any time during the session, or within such time as the Faculty may prescribe.

GRADUATION.

A diploma of the college, together with the degree corresponding to the course of study pursued, will be granted students who complete either of the prescribed courses and pass satisfactory examinations on all the branches embraced therein.

Each candidate for graduation is required to submit to the professor in charge of the leading department of his course a graduation thesis.

To every student who completes satisfactorily any one of the optional studies—German, Spanish, Latin—a certificate of proficiency on that subject will be granted.

Each student receiving a diploma will be required to pay $5 therefor.

HONORS.

The three students most distinguished for scholarship and deportment in each of the classes, as determined by marks and examinations, are known as honor men, though this rule may be modified if the number of students in any class, or their scholarship, shall not warrant such distinction.

The student in each of the several courses whose average grade, including all the studies during graduating year, is highest, shall read his thesis at commencement.

A valedictorian is elected by the members of the graduating class from their own number.

A member of the second class is chosen by his classmates to reply to the valedictorian.

Military promotion is an honor attainable by general good conduct and manly behavior, as well as excellence in studies.

REGULAR COURSES OF STUDY.

There are two regular courses of study and practice leading to degrees and extending through four years each. They are identical for the first year, thus giving the student the advantage of elementary training in subjects that are of equal importance to every one, and affording opportunity for intelligent choice between the courses as continued separately through the three succeeding years. In the third year, or second class, there is a still further specialization by which the student may, in the agricultural course, vary his studies with reference to obtaining either of

two degrees, that is, Bachelor of Scientific Horticulture (B. S. H.), or Bachelor of Scientific Agriculture (B. S. A.) In the mechanical course a similar specialization is provided for by which the student is given choice between the degrees of Bachelor of Civil Engineering (B. C. E.) and Bachelor of Mechanical Engineering (B. M. E.).*

All regular students must pursue either the agricultural or the mechanical course, and there is no course of instruction which is not industrial.

The languages are optional, except as shown in the curricula, and may be studied as subjects outside of the regular courses. There is no charge for any optional study.

If a student takes an optional study he will not be allowed to discontinue it before the end of the session, unless excused by the head of the department.

In view of the great practical importance of the German and Spanish languages for business purposes in our State, special attention is given to these. A large number of students are of German descent, and speak the language fluently. By association with these, young men may have continual practice in conversation out of the class room as well as in it.

In the curricula of studies the numeral indicates the number of hours per week devoted to the subject.

AGRICULTURAL COURSE.

FIRST YEAR—FOURTH CLASS.

Fall Term—Arithmetic (5); Grammar, Composition, Declamation, History of Texas (10); Elementary Agriculture (2). Practice: Carpentry Work (4); Agricultural and Horticultural Work (4); Free-hand Drawing and Penmanship (3); Infantry Drill (3).

Winter Term—Arithmetic and Algebra (5); Grammar, Composition, Declamation, History of United States (10); Domestic Animals (4). Practice: Carpentry Work (4); Agricultural and Horticultural Work (4); Free-hand Drawing and Penmanship (3).

Spring Term—Algebra (5); Grammar, Composition, Declamation, History of United States (10); Bookkeeping (2). Practice: Carpentry Work (4); Free-hand Drawing (1½); Agricultural and Horticultural Work (4); Drill (3).

SECOND YEAR—THIRD CLASS.

Fall Term—Algebra (5); Advanced Grammar, Composition, Declamation, General History (5); Elementary Botany and Fruit Culture (4);

*By Faculty regulation these several degrees will be replaced after June, 1895, by the degree of Bachelor of Science (B. S.), the course in which the degree shall have been taken being specified in the diploma, as for instance: Bachelor of Science (in Agriculture).

Elementary Physics (4). Practice: Agricultural and Horticultural Work (5); Free-hand Drawing (1½); Infantry Drill (3).

Winter Term—Algebra and Geometry (5); Advanced Grammar, Composition, Declamation, General History (5); Dairying (4); Elementary Physics (3); Physiology (3). Practice: Agricultural and Horticultural Work (5); Free-hand Drawing (1½).

Spring Term—Geometry (5); Rhetoric, Composition, Declamation, General History (5); Grasses (3); Vegetable Culture (2); Systematic Botany (4). Practice: Agricultural and Horticultural Work (5); Drawing (3); Infantry Drill (3).

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Scientific Agriculture)

Fall Term—Geometry and Algebra (3); Inorganic Chemistry (4); Breeding of Live Stock (5); Entomology (2); Veterinary Medicine (2). Practice: Agricultural and Horticultural Work (5); Analytical Chemistry (2); Infantry Drill (3).

Winter Term—Algebra (3); English, History of Greece and Rome, Essays (4); Inorganic Chemistry (4); Veterinary Medicine (2); Drill Regulations (2). Practice: Agricultural and Horticultural Work (5); Analytical Chemistry (5).

Spring Term—Trigonometry (3); English, Civil Government, Essays (2); Drainage (4); Organic Chemistry (4); Surveying (3). Practice: Agricultural Work (2½); Analytical Chemistry (5); Field Work in Surveying (–); Zoology (2); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term—Lectures on English Literature, English History (4); Feeds (5); Advanced Chemistry (4); Veterinary Surgery, Anatomy, Materia Medica (3). Practice: Agricultural Experiments (2½); Analytical Chemistry (4); Veterinary Practice; Infantry Drill (3).

Winter Term—Farm Machinery (5); Landscape Gardening (1); Veterinary Surgery, Anatomy, Materia Medica (3); Agricultural Chemistry (5); Lectures on Military Science (1). Practice: Agricultural Work (4); Analytical Chemistry (2½); Dissecting (4).

Spring Term—Lectures on English Literature, English History (2); Farm Management (5); Veterinary Surgery, Anatomy, Obstetrics (3); Forage Plants (2); Injurious Insects (2). Practice: Agricultural Work (5); Veterinary Practice (2½); Infantry Drill (3); Graduation Thesis.

Barns and Pure Bred Cattle.

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Scientific Horticulture.)

Fall Term—Geometry and Algebra (3); Inorganic Chemistry (4); Entomology (2); Structural Botany (4); German or Latin (3); Veterinary Medicine (2). Practice: Agricultural and Horticultural Work (5); Analytical Chemistry (2); Entomology (2); Infantry Drill (3).

Winter Term—Algebra (3); English, History of Greece and Rome, Essays (4); Inorganic Chemistry (4); German or Latin (3); Drill Regulations (2); Veterinary Medicine (2). Practice: Botany (2½); Analytical Chemistry (5).

Spring Term — Trigonometry (3); English, Civil Government, Essays (2); Organic Chemistry (4); Small Fruit Culture (3); Surveying (3); German or Latin (3). Practice: Horticulture (2½); Analytical Chemistry (5); Zoology (2); Field Work in Surveying (–); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term—Lectures on English Literature, English History, (4); Advanced Chemistry (4); Fungi and Plant Diseases (2); Horticulture (2); German or Latin (3); Veterinary Surgery (3). Practice: Botany (5); Analytical Chemistry (4); Veterinary Practice (2); Infantry Drill (3).

Winter Term—Landscape Gardening (1); Fertilizers (3); Agricultural Chemistry (5); German or Latin (3); Lectures on Military Science (1); Veterinary Surgery (3). Practice: Analytical Chemistry (2½); Horticulture (5); Veterinary Practice (4).

Spring Term—Lectures on English Literature, English History (2); Plant Variation and Breeding (2); Injurious Insects (2); Forage Plants (2); German or Latin (3); Fungi and Plant Diseases (2); Veterinary Surgery (3). Practice: Analytical Chemistry (2½); Horticulture (5); Veterinary Practice (2½); Infantry and Artillery Drill (3); Graduation Thesis.

MECHANICAL COURSE.

FIRST YEAR—FOURTH CLASS.

Fall Term—Arithmetic (5); Grammar, Composition, Declamation, History of Texas (10); Elementary Agriculture (2). Practice: Carpentry Work (4); Agricultural and Horticultural Work (4); Free-hand Drawing and Penmanship (3); Infantry Drill (3).

Winter Term—Arithmetic and Algebra (5); Grammar, Composition, Declamation, History of United States (10); Domestic Animals (4).

Practice: Carpentry Work (4); Agricultural and Horticultural Work (4); Free-hand Drawing and Penmanship (3).

Spring Term—Algebra (5); Grammar, Composition, Declamation, History of United States (10); Book-keeping (2). Practice: Carpentry Work (4); Free-hand Drawing ($1\frac{1}{2}$); Agricultural and Horticultural Work (4); Drill (3).

SECOND YEAR—THIRD CLASS.

Fall Term — Algebra (5); M. E. Lectures (2); Advanced Grammar, Composition, Declamation, General History (5); Elementary Physics (4). Practice: Shop Work (5); Mechanical Drawing (3); Infantry Drill (3).

Winter Term—Algebra and Geometry (5); M. E. Lectures (2); Advanced Grammar, Composition, Declamation, General History (5); Elementary Physics (3). Practice: Shop Work (5); Mechanical Drawing (3).

Spring Term—Geometry (5); M. E. Lectures (4); Rhetoric, Composition, Declamation, General History (5); Electricity and Magnetism (3); Practice: Shop Work (5); Mechanical Drawing (3); Infantry Drill (3).

THIRD YEAR—SECOND CLASS

(For the Degree of Bachelor of Mechanical Engineering.)

Fall Term—Geometry and Algebra (5); Descriptive Geometry (5); Inorganic Chemistry (4); Steam Engine (4). Practice: Shop Work (5); Mechanical Drawing (4); Infantry Drill (3).

Winter Term—Algebra (4); Inorganic Chemistry (4); Steam Engine (4); English, History of Greece and Rome, Essays (4); Drill Regulations (2). Practice: Shop Work (5); Drawing (4).

Spring Term—Trigonometry (4); Slide Valve (4); Metallurgy (4); English, Civil Government, Essays (2); Surveying (3); Kinematic Drawing (1). Practice: Shop Work (5); Drawing (4); Field Practice in Surveying (–); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term—Analytical Geometry, Mechanics (5); Graphics (5); Metallurgy (4); Letters on English Literature, English History (4). Practice: Experimental Work in Engineering (5); Metallurgy (2); Mechanical Drawing (4); Infantry Drill (3).

Winter Term—Analytical Geometry and Calculus (5); Mechanism (5); Metallurgy (3); Machine Design (4); Lectures on Military Science

(1). Practice: Experimental Work in Engineering (5); Metallurgy (2); Mechanical Drawing (4).

Spring Term—Calculus (5); Lectures on English Literature, English History (2); Mechanical Engineering (5); Machine Design (3). Practice: Experimental Work in Engineering (5); Metallurgy (2); Machine Design and Drawing (2½); Infantry Drill (3). Graduation Thesis.

THIRD YEAR—SECOND CLASS.

(For the Degree of Bachelor of Civil Engineering.)

Fall Term—Geometry and Algebra (5); Descriptive Geometry (5); Inorganic Chemistry (4); Road Making and Maintenance (2); German or Spanish (3). Practice: Shop Work (5); Drawing (4); Infantry Drill (3).

Winter Term—Algebra (4); Inorganic Chemistry (4); Graphic Statics (2); English, History of Greece and Rome, Essays (4); German or Spanish (3); Drill Regulations (2). Practice: Shop Work (5); Drawing (4).

Spring Term—Trigonometry (4); English, Civil Government, Essays (2); Geology (3); Plain and Topographic Surveying (5); German or Spanish (3). Practice: Shop Work (5); Field Work in Surveying, Drawing (4); Infantry and Artillery Drill (3).

FOURTH YEAR—FIRST CLASS.

Fall Term—Analytical Geometry, Mechanics (5); Lectures on English Literature, English History (4); Railroad Engineering, Use of Solar Compass and Plane Table (5); Sewers and Drains (2); German or Spanish (3). Practice: Field Work (5); Mechanical Drawing (5); Infantry Drill (3).

Winter Term—Analytical Geometry and Calculus (5); Mechanics of Materials, Stresses in Roofs and Bridges (5); Hydraulics (4); German or Spanish (3); Lectures on Military Science (1); Practice: Analytical Chemistry (5); Mechanical Drawing (5).

Spring Term—Calculus (5); Lectures on English Literature, English History (2); Roofs and Bridges by Analytical and Graphical Methods, Designing (6); German or Spanish (3). Practice: Work with Testing Machine, Designing and Field Work (7½); Mechanical Drawing (2½); Infantry and Artillery Drill (3). Graduation Thesis.

TEXT BOOKS.

FOURTH CLASS.

Arithmetic, *Greenleaf;* Algebra, *Davies;* First Lessons in Agriculture, *Gulley;* Elementary Grammar, *Patterson;* Composition, *Chittendon;* United States History, *Chambers;* Bookkeeping, *Musselman.*

THIRD CLASS.

Algebra, *Wells;* Geometry, *Wentworth;* Fruit Culture, *Thomas; Wood's* Manual; Truck Gardening South, *Oemler;* Rhetoric, *Kellogg;* Advanced Grammar, *Patterson;* General History, *Meyers;* Physiology, *Mill's Comparative;* Physics, *Peck's Ganot;* Electricity, *Deschanel's;* Steam Engine, *Goodeve.*

SECOND CLASS.

Geometry, *Wentworth;* Algebra, *Wells;* Trigonometry, *Wells;* Organic Chemistry, *Remsen;* Blowpipe Analysis, *Nason;* Chemical Analysis, *Kedzie;* Steam Engine, *Goodeve;* Slide Valve, *Halsey;* Lessons in English, *Lockwood;* Greece and Rome, *Sheldon;* English Language, *Meiklejohn;* Civil Government, *Young;* Surveying, *Davies;* Stadia Surveying, *Winslow;* Cæsar; German Reader, *Deutsch;* German Grammar, *Joyne's Meisner;* Spanish Reader, *Tolon; Velasquez's* Reader; Spanish Grammar *De Tornos;* Descriptive Geometry, *Faunce;* College Botany, *Bastin;* Physiological Botany, *Gray;* Entomology, *Packard;* Veterinary Medicine, *Robertson;* Drill Regulations, ———; Roads, Streets and Pavements, *Gillmore.*

FIRST CLASS.

Analytical Geometry, *Peck;* Elementary Mechanics, *Wood;* Practical Calculus, *Peck;* Geology, ———; Field Engineer, *Shunk;* Bridges and Roofs, *Merriman;* Mechanics of Materials, *Merriman;* New Spanish Reader, *Velasquez;* Spanish Grammar, *De Tornos;* German Prose, *Boisen;* German Grammar, *Joyne's Meisner;* Agricultural Chemistry, *Storer;* Forestry, *Hough;* Plant Physiology, *Goodale;* Veterinary Surgery, *Williams;* Veterinary Anatomy, *Chauveau;* Materia Medica, *Bartholow;* Veterinary Obstetrics, *Fleming;* Horse-shoeing, *Fleming;* Veterinary Surgery, *Liantard;* United States Army Regulations; Metallurgy, *Bloxam;*

STUDENTS WORKING IN BARN.

Graphical Statics, *Merriman* and *Jacoby;* Hydraulics, *Merriman;* Roofs and Bridges, *Merriman* and *Jacoby;* Designing, *Carnegie's Handbook;* Landscape Gardening, *Long;* Machine Design, *Low* and *Bevis*.

[Note.—As the Text Books are subject to change, students are advised not to purchase books before entering the College. The College keeps a supply of books, and furnishes them to students at cost. They must be paid for at time of purchase. Students are given the privilege of returning them on leaving the College, and receiving therefor the amount paid, less the damage done to them. Students will not be required to purchase Drawing Instruments.]

GRADUATE COURSES.

In the Agricultural or Horticultural Courses, the Degree of Master of Science (M. S.) will be given to those who have pursued graduate studies for two years, at least one of which shall be spent in residence at the College, and have passed satisfactory examinations thereon, and submitted an approved thesis. In the Mechanical and Civil Engineering Courses the Degrees of Mechanical Engineer (M. E.) and Civil Engineer (C. E.) respectively will be given under like conditions.

It is required for admission to study for one of these degrees that the candidate be a graduate of this College, or of some other institution approved by the Faculty. He must select a major subject in the department in which his first degree was taken, and two minor subjects from allied departments.

Students for this degree are under the general regulations of the College, but are not subjected to military discipline; they may, however, be required to assist in keeping order in the barracks.

A student desiring to enter for one of these degrees must select his course of study from the following prescribed subjects. This selection must be submitted to and approved by the Faculty, and no change can be made without approval of Faculty.

AGRICULTURE.

Farm economy, drainage and irrigation; studies in selection and cross-breeding to improve farm crops and forage plants; practical work in the management of farm and stock; original investigation by the student in any branch of agriculture.

CHEMISTRY.

Qualitative analysis, toxicology, and technology; theoretical and organic chemistry; agricultural chemistry; standard reference and text books; current chemical literature. Final thesis on original work.

CIVIL ENGINEERING AND PHYSICS.

A. CIVIL ENGINEERING.

Advanced work is offered in the following subjects: Hydrographic surveying; hydraulic and water supply engineering; masonry construction; stereotomy; geodesy; least squares; strains in draw bridges and other continuous structures; theory of the strength of materials; experimental work with testing machines; designing; detail and shop drawings: thesis.

B. PHYSICS.

Analytic mechanics and hydro-mechanics; advanced work in sound, heat, light and electricity; work in the laboratory.

DRAWING.

Machine Design, *Low* and *Bevis*.

Descriptive Geometry, Shades and Shadows, *Church*.

Such advanced work in drawing as may be needed by the student for his special course.

ENGLISH AND HISTORY.

A. ENGLISH.

Anglo-Saxon and Norman-French origins of the language. Advanced studies in the literature.

B. HISTORY.

The beginnings of civilization and the principles of ethnology.

Original investigation in some special line.

HORTICULTURE AND BOTANY.

A. HORTICULTURE.

Propagation and improvement of cultivated plants; fertilization and cross-fertilization; forestry; pomology; management of glass houses; entomology continued, including anatomy of types; laboratory work on

Students at Work in Field, January 10.

classification; special study of insecticides and management of an apiary; experimental work throughout the two years in hybridizing, nursery work and management, and commercial gardening; assisting in other experimental work.

B. BOTANY.

Grasses continued, reading, laboratory work and field experiments; mycology, thesis on special work, and original research with the microscope; microscopic work in plant history, including micro-chemistry and mounting; development of mosses and ferns; drawings and readings; collections of one hundred plant specimens; animals and plants under domestication; economic botany.

LANGUAGES.

The course in this department will embrace such studies and exercises as will lead to a thorough and practical knowledge of either German or Spanish language and literature.

MATHEMATICS.

Advanced Analytical Geometry; Differential and Integral Calculus; Analytical Mechanics; Differential Equations.

MECHANICAL ENGINEERING.

Continuation of fourth year's work, and Steam Engine (by Rankine) begun in first year. Experimental work in the machine shop; Steam Engine (by Rankine) completed; special subjects and original designing in second year. Practice same as in fourth year.

SPECIAL COURSES.

Special courses will not be encouraged, but upon correspondence with the president, such courses may be arranged with the professor or professors under whom instruction is desired.

SCHEDULE OF RECITATIONS.

In order to show definitely the manner in which the time of students is employed, the following schedule of daily work is appended.

Studies falling in the same hour are in different courses. Instructive work in the shops or laboratories is in this schedule designated as "practice." The larger classes are, as necessity may arise, divided into sections which may recite or work in the several departments at the same time under different instructors.

CHEMISTRY — STUDENTS' LABORATORY.

FALL SCHEDULE, 1894.

FIRST CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:40	1	English	English	English	English	German.
8:40- 9:30	2	German	Latin	German	Latin	German.
9:40-10:30	3	Mathematics	Mathematics	Mathematics	Mathematics	Mathematics.
9:40-10:30	3	Latin				
10:30-11:20	4	Metallurgy	Metallurgy	Metallurgy	Metallurgy	
10:30-11:20	4	Veterinary Surgery	Civil Engineering	Veterinary Surgery	Civil Engineering	Veterinary Surgery.
10:30-11:20	4	Spanish		Spanish		Spanish.
11:20-12:10	5	Agriculture	Agriculture	Agriculture	Agriculture	Agriculture.
11:20-12:10	5	Horticulture	Horticulture	Horticulture	Horticulture	
11:20-12:10	5	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering.
11:20-12:10	5	Civil Engineering	Civil Engineering	Civil Engineering	Civil Engineering	Civil Engineering.
12:10- 1:00	6		Chemistry	Chemistry	Chemistry	Chemistry.
2:00- 4:00		Chemical Practice		Chemical Practice	Veterinary Laboratory	Metallurgy.
2:00- 4:30		M. E. Practice	Agricultural Work		M. E. Practice	
2:00- 4:30			Horticultural Work			Horticultural Work.
2:00- 4:30			Drawing	Drawing—D	C. E. Practice	C. E. Practice.
5:00- 6:00		Drill		Drill		Drill.

SECOND CLASS.

Hours	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:50	1	Spanish	German	Spanish	German	German.
8:50- 9:40	2	Descriptive Geometry—1	Descriptive Geometry—1	Descriptive Geometry—1	Descriptive Geometry—1	Descriptive Geometry—1
8:50- 9:40	2	Descriptive Geometry—2	Descriptive Geometry—2	Descriptive Geometry—2	Descriptive Geometry—2	Descriptive Geometry—2
9:40-10:30	3	Entomology	Veterinary Medicine	Entomology	Veterinary Medicine	
9:40-10:30	3	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering	Mechanical Engineering.
9:40-10:30	3	Civil Engineering		Civil Engineering		
10:30-11:20	4	Breeding of Stock	Breeding of Stock	Breeding of Stock	Breeding of Stock	Breeding of Stock.
10:30-11:20	4	Botany		Botany		Botany.
10:30-11:20	4	Mathematics—1	Mathematics—1	Mathematics—1	Mathematics—1	Mathematics—1.
11:20-12:10	5	Chemistry—2	Chemistry—2	Chemistry—2	Chemistry—2	Spanish.
11:20-12:10	5		Mathematics—3		Mathematics—3	Mathematics—3.
12:10- 1:00	6	Chemistry—1 and 3	Chemistry—1 and 3	Chemistry—1 and 3	Chemistry—1 and 3	
12:10- 1:00	6	Mathematics—2	Mathematics—2	Mathematics—2	Mathematics—2	Mathematics—2.
2:00- 4:00			Chemical Practice—1			Chemical Practice.
2:00- 4:00					Drawing	Drawing.
2:00- 4:30			M. E. Practice	M. E. Practice	Horticultural Work	
2:00- 4:30						
5:00- 6:00		Drill		Drill		Drill.

FALL SCHEDULE, 1894.

THIRD CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:50	1	English—4	English—4	English—4	English—4	English—4.
8:00- 8:50	1	Physics—1.	Physics—1	Physics—1	Physics—1	
8:50- 9:40	2	English—2	English—2	English—2	English—2	English—2.
8:50- 9:40	2	Physics—3	Physics—3	Physics—3	Physics—3	
9:40-10:30	3	English—1	English—1	English—1	English—1	English—1.
9:40-10:30	3	Mathematics—2 and 3	Mathematics—2 and 3	Mathematics—2 and 3	Mathematics—2 and 3	Mathematics—2 and 3.
9:40-10:30	3	Physics—4	Physics—4	Physics—4	Physics—4	
10:30-11:20	4		M. E. Lectures—S	M. E. Lectures—D	M. E. Lectures—S	M. E. Lectures—D.
10:30-11:20	4	Drawing—D		Drawing—S		
11:20-12:10	5	Mathematics—4	Mathematics—4	Mathematics—4	Mathematics—4	Mathematics—4.
12:10- 1:00	6	Botany		Botany	Botany	Botany.
12:10- 1:00	6	English—3	English—3	English—3	English—3	English—3.
12:10- 1:00	6	Mathematics—1	Mathematics—1	Mathematics—1	Mathematics—1	Mathematics—1.
12:10- 1:00	6	Physics—2	Physics—2	Physics—3	Physics—2	
2:00- 4:10		Drawing—D	Free-Hand Drawing	Drawing—S		
2:00- 4:30		Agricultural Work	M. E. Work	Horticultural Work	M. E. Practice	
5:00- 6:00		Drill		Drill		Drill.

FOURTH CLASS.

Hours.	Period	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
8:00- 8:50	1	English—1	English—1	English—1	English—1	English—1.
8:50- 9:40	2	English—3	English—3	English—3.	English—3	English—3.
8:50- 9:40	2	Mathematics—1 and 2	Mathematics—1 and 2	Mathematics—1 and 2	Mathematics—1 and 2	Mathematics—1 and 2.
9:40-10:30	3	Elementary Agriculture—A	Elementary Agriculture- B	Elementary Agriculture—A	Elementary Agriculture—B	
9:40-10:30	3	Drawing—B	Drawing—A	Drawing—B	Drawing—A	
10:30-11:20	4	English—2 and 3	English—2 and 3	English—2 and 3	English—2 and 3	English- 2 and 3.
11:20-12:10	5	English—1 and 2	English—1 and 2	English—1 and 2	English—1 and 2	English—1 and 2.
11:20-12:10	5	Mathematics—3.	Mathematics—3	Mathematics—3	Mathematics—3	Mathematics—3.
12:10- 1:00	6	Drawing—A	Drawing—B.	Drawing—A	Drawing—B	
2:00- 4:00		M. E. Practice	Agricultural Work	M. E. Practice		Agricultural Work.
5:00- 6:00		Drill		Drill		Drill.

CHEMISTRY — PRIVATE LABORATORY.

INFORMATION CONCERNING ADMISSION.

REQUISITES FOR ADMISSION.

To enter the College, an applicant must have attained his fifteenth year, or otherwise must have attained a degree of physical and mental advancement corresponding to that age. He must be free from contagious or infectious disease, or any deformity that would unfit him for the performance of his duties as a student of the College. He may be required to furnish evidence that he has not been dismissed from another institution of learning, and that his moral character is good.

The mental attainments necessary for entering the Fourth Class comprise a fair knowledge of arithmetic as far as proportion, of descriptive geography, and of elementary English grammar and composition.

Applicants for the Third Class will be required to pass a satisfactory examination on the mathematics and English studied by the Fourth Class.

Applicants for the Second Class will be required to pass a similar examination on the mathematics and English of the Fourth Class and on all the subjects studied by the Third Class in the course desired, but they may be admitted conditionally if they fail in not more than three subjects.

The reputation of this College for good discipline has caused parents in some instances to apply for admission for boys that had proved unmanagable and thoroughly vicious at other institutions. It is desired that such applications be not in future presented.

The proper time—that is, the BEST time—for entering the classes is at the beginning of the scholastic year. Students are admitted, however, at any time of the year, but if not fully prepared in the previous work of the class, they are then obliged to make up their deficiencies by *extra efforts* during the term.

MATRICULATION.

Upon arrival at the College young men intending to enter will report as soon as possible to the President of the College. From him they will go to the several professors for enrollment in classes, and to the Commandant for assignment to company and quarters.

Upon entering the College every student will be required to state upon honor that he has no firearms or other deadly weapons in his possession, or if he has such to deposit them with the President.

EXPENSES FOR SESSION OF NINE MONTHS.

Trust fund	$5 00
Incidental fee	5 00
Physician's fee	5 00
Maintenance, Fall Term	50 00
Maintenance, Winter Term	35 00
Maintenance, Spring Term	40 00
Total	$140 00

Expenses of a graduate student will be $15 for material used in laboratories and practical work, and $5 for physician's fee, with charge for maintenance as above. Day students pay $15 as trust fund, incidental fee, and physician's fee, as above.

The trust fund is to pay for property damaged or destroyed, and will be refunded if there is no charge of this kind against the student.

Incidental and physician's fees are payable on entrance, whether at the beginning of or during the session, and can not be refunded.

Maintenance includes board, fuel, washing, lights, room rent, bedsteads, mattresses, pillows, tables, washstands, chairs, wardrobes, buckets, basins and slop cans, all of which the College furnishes.

Each student is required to bring with him and keep on hand a sufficient supply of bed clothing, towels, etc., and underclothing sufficient for one year's wear.

Students are required to take their meals at the Mess Hall.

Payment for each term must be made in advance, but a student entering during a term will be charged maintenance for the remainder of that term only.

A student once entering for the term and having paid for that term or the balance of it, as required by the resolution of the Board of Directors, shall forfeit all claim to said payment in case of voluntary withdrawal from the College before the expiration of said term, except in case of sickness.

If on any account the prompt payment of the dues should be delayed, the President will mail to the parent or guardian of the student the following notice:

NOTICE TO PARENTS AND GUARDIANS.

"Your attention is respectfully directed to the following resolution, passed by the Board of Directors of the Agricultural and Mechanical College of Texas:

'*Resolved*, That it shall be the duty of the Treasurer to notify parents and guardians ten days after the date upon which a term payment is due that if same

Practice in Civil Engineering.

is not paid within twenty days thereafter (thirty days from time the payment was due), the student so in arrears will be dismissed.

'Payment due.....18.. Notice sent.....18..

'Limit expires.....18..'

"All communications in reference to accounts of students should be addressed to the President of the College."

UNIFORMS, BOOKS, AND STATIONERY.

A neat uniform of cadet gray cloth is furnished here, at a cost of from $15.50 to $18.

These uniforms are made by contract, and students are required to purchase from the contract tailor in order that uniformity may be secured in the cut and quality of the clothing, and that parents may be protected from imposition by irresponsible persons. The contract suits are carefully inspected by the Commandant of Cadets, and thus the full value of money expended for them is secured.

There is no charge for tuition, and through the agency of funds derived under a law of Congress text books have been made practically free. Stationery may be obtained here.

BEGINNING OF THE SESSION.

The eighteenth annual session will open Wednesday, September 12, 1894, and will close on Tuesday, June 11, 1895.

Students should not arrive at the College earlier than Monday, September 10.

GENERAL INFORMATION.

The College is situated at College Station, in the county of Brazos, five miles south of Bryan and ninety-five miles northwest of Houston. The Houston and Texas Central Railroad runs through the grounds, daily trains stopping at the station, about 800 yards from the main building.

POSTOFFICE.

This is College Station, not Bryan. It is important that correspondents should observe this, since letters are often delayed by going to the latter place. College Station is a money order office, and there is an express office at this place.

MAIN BUILDING.

The main building stands on the highest point of the grounds. It is four stories high, made of brick, with mansard roof and towers. The rooms are all of high pitch and well ventilated. There are forty-five rooms in the building. On the fourth story nearly half the space is occupied by the large room assigned to the drawing department. Two society halls, the armory, and one small room are also on this floor. On the third floor are the section rooms of the departments of English, languages, and horticulture and botany, the library and reading room, and eight rooms occupied by officers of the College. On the second floor are the President's office, the business office, the book store, the chemical laboratory and section room, the museum, the agricultural section room, English section room, the office of the Director of the Agricultural Experiment Station, and the janitor's room. On the first floor are chemical private laboratory, furnace room, section room, and instrument room of the Department of Civil Engineering and Physics, store room, dark room, mathematical section room, guard room, commandant's office, and section room and laboratory of the Department of Veterinary Science. There are broad halls running through each story at right angles to each other, and two sets of stairways, one in the middle, the other at the end of the building.

SHOPS.

North of the Main Building are found those buildings occupied by the Department of Mechanical Engineering, which consist practically of one building, although made in two distinct parts. First, the one containing the carpenter shop, class rooms and model-room; second, that containing the machine and blacksmith shops and the boiler-room. The carpenter shop is fitted up with benches and tools for the accommodation of sixty pupils, while above it, on the second floor, are two class rooms and a model and designing room. Back of this are the other shops mentioned, in a building of one story. Power for the machine shop is furnished by an eighteen horse power Straight Line Engine, and that for the blacksmith shop by a five horse power engine, which was built and set up the graduating class of 1888. The machine shop is equipped with sixteen wood turning lathes, circular, band and jig saws, emery wheel stand, six engine lathes, planer, shaper, drill and milling machine. The blacksmith shop has thirteen forges with necessary tools, power blast and exhaust fan.

PFEUFFER HALL.

This new building, erected in 1887, is for a dormitory, and has capacity to accommodate seventy-five students. It is named in honor of Hon. George Pfeuffer, a former President of the Board of Directors.

AUSTIN HALL.

This is a dormitory, erected in 1888, and has capacity to accommodate seventy-five students.

ROSS HALL

Is another and more commodious dormitory, three stories high, with forty-one rooms, erected in 1892, and has accommodations for eighty-two students.

HOSPITAL.

A large and comfortable building has been erected as a hospital and surgeon's residence.

The surgeon will give his attention to all students without charge other than the regular medical fee of five dollars paid by each student upon entrance.

CREAMERY.

The creamery has been in successful operation since 1888. It is in a substantial building, supplied with a complete outfit of the latest improved apparatus for making butter. The machinery is driven by a six-horse power engine. To this there has been recently added a well made building, supplied with all necessary apparatus for manufacture of cheese. Practice in both butter and cheese making forms part of the agricultural course.

ASSEMBLY HALL.

This building has been completed and furnished with neat opera chairs. It is a two-story brick building, stuccoed with Portland cement; has main floor and gallery. It is an ornament to the grounds.

FARM BUILDINGS.

These are situated several hundred yards in the rear of the main building. They consist of two large barns, a milking shed, and a piggery.

One of the barns is new, and is fitted with stalls for the thoroughbred cattle, and the storage rooms for implements and food. These buildings are supplied with water from a large tank, which is kept filled by a wind mill.

There have recently been erected three large silos in connection with the Agricultural Experiment Station, and students will have the advantage of practical instruction in the construction of silos and the best methods of preparing ensilage.

Recent additions comprise a laundry, with full capacity to meet the demands of the College; an ice plant, which manufactures three tons of ice daily; a natatorium, or system of bath-rooms, with elegant modern appliances, including swimming pool supplied with pure white sulphur water from the artesian well at a temperature of ninety-two degrees (this temperature may be raised to any degree by heating appliances in the building); the water pressure from a standpipe supplies the grounds and buildings through a system of mains and furnishes ample water for irrigation and fire protection; a fire-proof artillery shed, for protection of two three-inch breech-loading rifled cannon being manufactured by the United States government for the College; an electric light plant, of full capacity for lighting grounds and buildings and affording power for electric fans for the Mess Hall.

PERMANENT FUND.

In November, 1871, the Legislature formally accepted from Congress the gift of one hundred and eighty thousand acres of public land for the endowment of an agricultural and mechanical college. This land was sold for $174,000, which sum was invested in 7 per cent State bonds. As under the Act of Congress neither the principal nor interest of this money could be used for other purposes than the payment of officers' salaries, at the time of the opening of the College there was an addition to the fund from accumulated interest of $35,000. This was invested in 6 per cent bonds of the State, thus furnishing an annual income of $14,280.

LANDS.

The county of Brazos donated to the College two thousand four hundred and sixteen acres of land lying on each side of the Houston and Texas Central Railroad, five miles from Bryan and ninety-five from Houston.

Section Room — Department of Civil Engineering and Physics.

GROUNDS, FARM AND STOCK.

The farm, garden, orchard, barnyards and campus are included in the inclosure to the east of the station. The farm comprises about two hundred acres. This is devoted solely to experimental culture and the production of forage for stock. The orchard of eighty acres contains a large variety of young fruit trees more or less adapted to this climate. The garden affords experimental work to students and furnishes an abundance of vegetables to the mess hall. A young vineyard has been started; many of the vines are already bearing well. Back of these are the piggery, calf lots, barns and pastures of about four hundred acres.

The College now owns registered cattle, Dutch, Frisians, Galloways, and Jerseys, besides a number of high grade Shorthorns and common cows for the present milk supply. The swine include Essex and Berkshires. On the west side of the railroad two pastures of eight hundred acres each have been enclosed.

MILITARY ORGANIZATION AND DISCIPLINE.

For the purpose of maintaining good order and discipline, as well as for the proper execution of the law of Congress requiring military instruction of the students, they are organized into a battalion of four companies and staff. The battalion is under the immediate command of the Commandant. The officers, commissioned and non-commissioned, are students taken for the most part from the first and second classes. They are appointed by the President of the College upon the recommendation of the Commandant, and their appointment and rank is made to depend upon the active and soldierly performance of their duties, their sense of duty and responsibility, and their general good conduct and class standing.

The President, by College regulations, is responsible for the government and management of the College, and supervises and controls all the departments, collegiate and otherwise.

The Commandant has immediate command of the corps of students, and is responsible for the military organization. All permits for privileges, all excuses and explanations for delinquencies must be submitted through him.

GENERAL REGULATIONS.

It is understood that every student upon entering the College pledges himself to an honest effort to observe the regulations and sustain the authorities in the maintenance of discipline.

The strictest attention to study, and the most exact punctuality in attendance on recitations and other duties, will be made the condition of every student's continuance at the College; and any student who without authority absents himself from recitation or any other duty, deserts his class, or refuses to attend when warned, shall be dismissed, or less severely punished, at the discretion of the Faculty.

Students are forbidden to enter into combinations under any pretext whatever. One who shall begin, excite, cause or join in any boisterous or riotous conduct, or become a party to any agreement to avoid or violate any regulation, to hold no intercourse with a comrade, or to do any act to the prejudice of good order and military discipline, shall be dismissed.

If any student shall be guilty of hazing or of inciting others thereto, he shall be expelled, and it shall be the duty of the President to place opposite his name in the Catalogue the words, "expelled for hazing."

Students are prohibited, under the penalty of dismissal, from having in their possession ammunition, weapons, or arms not issued for the performance of military duty; nor shall these be retained loaded in quarters under any pretext.

A student who shall drink, or bring, or cause to be brought within the cadets' limits, or have in his room, or otherwise in his possession, any fermented or intoxicating liquor, or fruits or viands preserved in intoxicating liquor, shall be dismissed or otherwise punished, at the discretion of the Faculty.

No student shall have in his possession or play at cards or games of chance, engage in a raffle, or in any manner wager money or other things, on penalty of dismission.

Permission to attend private parties or places of public amusement will not be granted during the term.

No cadet can be granted a leave of absence during a term without an urgent necessity.

No student is allowed to leave the College during the session without permission of the President of the College, on application through the Commandant.

A student who shall cut, mark, or otherwise injure or deface the buildings, furniture, or appurtenances, the trees, shrubbery, greensward, grounds, fences, stables, or outhouses, or who shall lose, injure, destroy, or improperly dispose of the arms, accoutrements or other property of the College, shall make good all damage, and be dismissed or otherwise punished according to the nature of the offense.

When the responsibility for the destruction of State property can not be fixed upon any one, the amount of the damage will be assessed against

the occupants of a room or division of the entire body of the students, as the case may require.

Students receive the admonition and counsel of the President before being subjected to any penalty, except in the case of flagrant offenses. Those who are habitually neglectful of their duties, or who do not regularly attend their classes, will be required to withdraw from the College.

To each recorded delinquency a number of from one to ten, proportional to the degree of the offense, in a moral and military view, is assigned to express demerit.

Any student receiving demerits as follows shall be declared deficient in conduct, and subject to dismissal: In the first class, one hundred in a session, or thirty-four in a term; in the second class, one hundred and fifty in a session, or fifty in a term; in the third class, two hundred in a session, or sixty-six in a term; in the fourth class, two hundred and fifty in a session, or eighty-four in a term.

TO PARENTS AND GUARDIANS.

The necessity for uninterrupted attention to their studies on the part of students can not be too strongly urged. It is impossible for a young man to become interested in his work here if he is permitted to leave the College whenever any special amusement is advertised in our neighboring towns and cities. It is therefore respectfully asked that those who send their sons or wards here do not, except in the most pressing emergencies, request permission for them to leave their studies, or to come home for the Christmas holidays before the date of the vacation.

Whenever the parent or guardian shall leave the application for special permits to the discretion of the son or ward, the College authorities will judge of the propriety of granting such permits.

HYGIENE.

The buildings of the College stand upon the crest of a "divide," from which there is sufficient slope to carry off all drainage.

The soil is sandy, and mud and water disappear within a few hours after rain. An extensive open prairie surrounds the College on all sides. There is a constant breeze — usually very strong. The water used by students is obtained from cisterns, supplied from high, clean roofs.

The rooms of the students are inspected at least twice a day, and are required to be kept neat and well ventilated.

There is in the vicinity of the College apparently nothing to produce malarial sickness, and as a matter of fact there is very little of it here. All serious sickness has been in the form of pneumonia and measles, which do not depend on local causes.

The food served in the mess hall is abundant, palatable, and wholesome. It is therefore very desirable that parents should refrain from sending boxes of delicacies to their sons. The practice of eating from these between meals is undoubtedly very injurious to the health of the young men, and the surgeon has traced more sickness and consequent loss of time to this one cause than to any other.

The drill, farm and shop practice, and athletic sports furnish abundant and wholesome exercise for the students.

RELIGIOUS AND MORAL CULTURE.

Every Sunday there will be service in the chapel, and all students must be present unless excused by special request of parents or guardians. The faculty will try by all means within their power to protect and develop good morals in those committed to their charge.

The situation of the College is peculiarly favorable for the preservation of the morals of the students. The nearest town is distant five miles, and it is almost impossible for any student to go to Bryan, even for a short time, without his absence becoming known to the authorities. All the temptations that beset young men in cities are entirely absent here.

An active branch of the Young Mens' Christian Association has been established, with a present membership of forty-five. In conjunction with their Christian work these young men, with the liberal aid of the professors, cadets, citizens and the College, erected a gymnasium hall which has been fairly well furnished with the ordinary paraphernalia requisite for the reasonable exercise of gymnastic feats. This has been hailed by the boys as a great boon, and affords the means of recreation immeasurably enjoyed.

LITERARY SOCIETIES.

There are two literary societies at the College—the Austin and the Caliopean. They meet weekly in their respective halls for practice in debate, literary composition, and declamation. Public debates are held frequently during the session, and speakers are invited to deliver addresses.

MUSEUM.

A room in the main building has been fitted up for a museum. The closets and show cases are well furnished with specimens of many varieties.

Minerals from all parts of the State will be received and their composition determined by chemical analysis.

INTERIOR OF STORE ROOM — DEPARTMENT OF CIVIL ENGINEERING AND PHYSICS.

LIBRARY AND READING ROOM.

A valuable library and reading room have been provided for the use of the students, and additions will be annually made.

The library now comprises standard works of history, biography, agriculture, mechanics, engineering, mathematics, natural science, law, and political economy, mental and moral philosophy, poetry, general literature, and reference.

Gifts of books and magazines will be thankfully received. Back numbers of literary and scientific periodicals will be especially useful in completing files.

LIST OF PERIODICALS AND PAPERS IN THE READING ROOM.

The following papers have been contributed to the reading room by the publishers, excepting those marked with an asterisk (*):

AGRICULTURAL.

Acker und Gartenbau Zeitung. Milwaukee, Wis.
Agricultural Science, New York.
*American Agriculturist, New York.
American Garden, New York.
Bulletin D'Agriculture, Paris.
Bulletin Ministere De L'Agriculture, Paris.
*Country Gentleman, Albany, N. Y.
Farm Journal, Philadelphia.
Farm, Field and Fireside, Chicago, Ill.
Farm and Fireside, Springfield, Ohio.
Farm and Home, Springfield, Mass.
Farmer's Call, Quincy, Ill.
Farmer's Review, Chicago.
*Garden and Forest, New York.
Homestead, Des Moines, Iowa.
Illustrated Journal of Agriculture.
Industrialist, Manhattan, Kan.
Kansas Farmer, Topeka, Kan.
Louisiana Planter, New Orleans, La.
Massachusetts Ploughman, Boston, Mass.
Mirror and Farmer, Manchester, N. H.
Northwestern Agriculturist, Minneapolis, Minn.
Our Grange Homes, Boston, Mass.
*Pacific Rural Press, San Francisco.
Rural New Yorker, New York.
*Southern Cultivator, Atlanta, Ga.
Southern Mercury, Dallas, Texas.
Southern Planter, Richmond, Va.

Texas Farm and Ranch, Dallas, Texas.
Texas Farmer, Dallas, Texas.
Wisconsin Agriculturist, Racine, Wis.
Western Farmer, Sioux City, Iowa.

STOCK.

*Breeder's Gazette, Chicago.
*Horseman, Chicago.
Live Stock Indicator, Kansas City.
National Stockman and Farmer, Pittsburg.
Stockman's Weekly Review, Chicago, Ill.
Texas Live Stock Journal, Fort Worth.
Texas Stockman and Farmer, San Antonio.

DAIRY.

American Creamery, Chicago, Ill.
*American Dairyman, New York.
Dairy Column, Chicago.
Dairy World, Chicago.
Hoard's Dairyman, Fort Akinson, Wis.
Jersey Bulletin, Indianapolis.

SHEEP AND HOGS.

American Sheep Breeder, Chicago.
American Swineherd, Chicago.

MECHANICAL.

*Age of Steel, St. Louis, Mo.
*Architecture and Building, New York.
*American Machinist, New York.
Bulletin des Seances de la Societe D'Agriculture, Paris.
*Dixie, Atlanta, Ga.
Engineering Mechanics, Philadelphia, Pa.
*Iron Age, New York.
Manufacturer and Builder, New York.
Mechanical News, New York.
*Railroad Gazette, New York.

SCIENTIFIC.

*American Journal of Archæology.
American Meteorological Journal, Boston, Mass.
*American Journal of Science, New Haven, Conn.
American Geologist, Minneapolis, Minn.
American Chemical Journal, Baltimore, Md.
American Naturalist, Philadelphia.
Botanical Gazette, Crawfordsville, Ind.
Drainage Journal, Indianapolis, Ind.

DRAWING ROOM NO. 1.

Druggist's Circular, New York.
*Electrical World, New York.
*Engineering News, New York.
*Engineering and Mining Journal, New York.
Journal of Analytical and Applied Chemistry, Easton, Pa.
Journal of Comp. Medicine and Surgery, New York.
*Nature, New York.
*Popular Science Monthly, Boston, Mass.
Popular Science News, Boston, Mass.
*Science, New York.
*Scientific American and Supplement, New York.
School of Mines Quarterly, Columbia College, New York.
Veterinary Journal, London, England.
Western Penman, Cedar Rapids, Iowa.

LITERARY.

*Blackwoods' Magazine, Edinburgh.
*Cosmopolitan, New York.
*Fortnightly Review, London, England.
*Forum, New York.
*Harper's Monthly, New York.
*Literary Digest, New York.
*Nation, New York.
*North American Review, New York.
*Public Opinion, New York.
*Scribner's Magazine, New York.
*The Century, New York.

RELIGIOUS.

Christian Observer, Louisville, Ky.
Missionary Review, New York.
Parish Visitor, New York.
Southwestern Presbyterian, New Orleans.
Texas Presbyterian, Houston, Texas.
Texas Standard, Waco, Texas.
Texas Baptist and Herald, Dallas, Texas.
Western Recorder, Louisville, Ky.

GENERAL NEWS.

Abilene Reporter, Abilene, Texas.
Anvil, Castroville, Texas.
Chronicle, Denton, Texas.
*Dallas News (daily), Dallas, Texas.
Freie Presse Fur Texas, San Antonio, Texas.
*Houston Post (daily), Houston, Texas.
*New York World (weekly), New York.
*Picayune (weekly), New Orleans, La.
Uvalde News, Uvalde, Texas.
Woman's Column, Boston, Mass.

Woman's Tribune, Washington. D. C.
McKinney Weekly Enquirer, McKinney, Texas.
Terrell Times-Star, Terrell, Texas.
Mason County News, Mason, Texas.
Seymour News, Seymour, Texas.
Hays County Times, San Marcos, Texas.
Borden Spokesman, Borden, Texas.
Mexia Weekly Ledger, Mexia, Texas.
Floresville Chronicle, Floresville, Texas.
Flatonia Argus, Flatonia, Texas.
Ennis Weekly Local, Ennis, Texas.
Ennis Saturday Review, Ennis, Texas.
Kimble County Citizen, Junction City, Texas.
Belden Monitor, Belden, Texas.
Standard-Herald, Rusk, Texas.
Brownwood Banner, Brownwood, Texas.
New Era, ——, Texas.
Jacksboro Gazette, Jacksboro, Texas.
Eagle Pass Guide. Eagle Pass, Texas.
Farmer's Advocate, Paris, Texas.
Sunday Gazetteer, Denison, Texas.
Santa Anna News, Santa Anna, Texas.
Eastland Chronicle, Eastland, Texas.
Midland Gazette, Midland, Texas.
Franklin Herald, Mt. Vernon, Texas.
Sealy Weekly News, Sealy, Texas.
People's Era (San M. F. P.), San Marcos, Texas.
Semi-Weekly Times, Palestine, Texas.
Patriot, Navasota, Texas.
Navasota Tablet, Navasota, Texas.
Bryan Eagle, Bryan, Texas.
Brazos Pilot, Bryan, Texas.
Glenrose Herald, Glenrose, Texas.
Victoria Review, Victoria, Texas.
Quanah Tribune, Quanah, Texas.
Dublin Telephone, Dublin, Texas.
Orange Leader, Orange, Texas.
Van Alstyne News, Van Alstyne, Texas.
Waco Day-Globe, Waco, Texas.
Waco Evening News, Waco, Texas.
Seguin Zeitung, Seguin, Texas.
Pearsall News, Pearsall, Texas.
Graham Leader, Graham, Texas.
Temple Tribune, Temple, Texas.
Texas Staats Zeitung, ..., Texas.
Nord Texas Presse, Dallas, Texas.

ILLUSTRATED.

*Harper's Weekly, New York, N. Y.
*Puck, New York.
*Ueber Land und Meer, Berlin, Germany.

Drawing Room No. 2.

JUVENILE.

Juvenile Ranger, Austin, Texas.
*St. Nicholas, Boston, Mass.
Travelers' Record, Hartford, Conn.
*Youth's Companion, Boston, Mass.

DEPARTMENTS OF INSTRUCTION.

DEPARTMENT OF AGRICULTURE.

PROFESSOR CONNELL.
ASSOCIATE PROFESSOR CLAYTON.
ASSISTANT PROFESSOR CARSON.

The design in the course of agriculture is to furnish not only close, practical instruction in all branches of progressive farming and stockraising, but also a broad and liberal education, fitting the student for the higher demands of agricultural industry and the full responsibilities of educated citizenship. For a complete outline of studies pursued, see curricula on preceding pages; the more important branches are briefly noted below.

In the study of domestic animals, careful attention is given to the merits and demerits of different breeds, origin, description and characteristics being discussed specifically for each breed, with general notes on care, management, etc., pertaining to all.

Dairying is given considerable prominence. The creamery building is thoroughly furnished and fitted with the latest improved machinery and apparatus for the practical instruction of students, who perform the entire work, under the immediate supervision of the professor or his assistant.

The aim is to thoroughly fit our students for taking charge of and operating creameries, as well as managing dairy farms in any portion of the State.

In stockbreeding the aim is to acquire familiarity with the principles of selection, feeding, etc., to change or perpetuate characters and laws governing the transmission of qualities. Especial attention is given to the breeding, selection, and management of dairy stock.

The study of cattle feeding is pursued in the natural order of topics discussed, taking up, first, the general laws of animal nutrition; second, the chemical composition of feeding stuffs; third, the feeding of farm animals. In this way a thorough knowledge is acquired of the principles

and reasons upon which profitable cattle feeding is based, either upon the range or in the yard.

Work is required of each student taking the course. This brings him in close contact with the crops of cotton, corn, grasses, grains, etc., and keeps him in sympathy with the studies pursued in the class-room. The feeding of animals for experiment in the production of pork, milk, and beef is done by students under the close supervision of a College officer. For all such work faithfully performed students are paid. Work is a part of the regular course requirements, and must be taken by every student. The 2400 acres in the farm, with its 250 head of cattle, 100 head of hogs, the work stock, improved tools and machinery for all farm work, offer illustrations of great practical value to the student.

The senior class devote the year to the study of drainage and irrigation, fertilizers, and farm management. The latter includes comparison of the different branches of agriculture, rotative and successive cropping, management and economy of labor, selection and care of machinery, care of stock, planting and harvesting cotton, grain, and forage crops, and general suggestions as to profit and loss in farming.

Practice is given regularly from four to eight hours per week throughout the course.

The fourth class have field work with different crops and fertilizers, and are trained in judging stock of the different breeds, good specimens of which are found at the College.

The third and second classes perform all work in connection with the creamery, as previously stated, and have charge of grass and grain tests.

The work of the first class consists in the conduct of field and feeding experiments, laboratory, microscopic, and such other work as will best fit them for agricultural pursuits.

In addition to the above regular practice, all students are permitted and encouraged to work one or two afternoons each week or on regular detail work at other periods—at a maximum rate of fifteen cents per hour—at whatever work may be found to do. Students avail themselves of this opportunity to defray a portion of legitimate College expenses without detriment to their studies.

The library is well supplied with standard works of reference on all branches, which students may consult at any time in addition to the regular text books used in the course.

The establishment of the Agricultural Experiment Station at the College, under the supervision of the Professor of Agriculture, as director, makes it possible to give students the full benefit of all experiments conducted at the College, as well as permitting a careful study of results of valuable tests conducted elsewhere, by frequent reference to bulletins from other stations, files of which are kept in the Director's office.

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MICROSCOPIC PRACTICE IN LABORATORY—STUDYING PLANTS AND THEIR DISEASES.

DEPARTMENT OF CHEMISTRY AND MINERALOGY.

Professor Harrington.
Associate Professor Adriance.
Assistant Professor Tilson.

CHEMISTRY.

The subject of chemistry will be introduced by the study of inorganic chemistry, passing into a brief course of organic chemistry. The attention of the students will be directed to the historical development of the science, and to the phases of chemical theory as at present understood by chemists.

During this part of the course there will be constant practice in the use of symbols and in chemical calculations. When possible, students will make illustrative experiments for themselves. Special attention will be given to technical processes and to the construction and working of apparatus for the manufacture of chemicals.

After the general principles of chemistry are understood, the study will be supplemented by practical work in the laboratory. This work will commence with the use of the blow-pipe, simple glass working, and fitting up of apparatus, continuing into quantitative analysis, both gravimetric and volumetric.

Advanced students will be required to investigate special subjects in original work and present their results to the professor.

Agricultural students will spend their time mainly in agricultural analysis, consisting of examination of soils, fertilizers, manures, feed stuffs, marls, ashes, etc.; but will be given exercises in manufacturing chemistry also.

MINEROLOGY AND METALLURGY.

The course in mineralogy will be made as thorough as time will allow. Work in this department will commence in the second class, during which time much attention will be given to the systematic examination of minerals. The study is continued in the first class in connection with geology and metallurgy, special attention being given to the economic aspect of geology and to the metallurgy of iron and copper. The manufacture of charcoal and collecting the by-products, together with the use of charcoal furnaces in smelting iron ore, will be thoroughly discussed. Assaying, as practiced in connection with mines and metallurgy, will be taught to students of the B. M. E. course.

It is the object of the department of chemistry and mineralogy to make the course of study thorough and practical, and as far as possible to equip students with information that will be at once available on leaving College.

MEANS OF ILLUSTRATION AND WORK.

The laboratory is well supplied with chemicals, minerals, glass, porcelain, and platinum ware, gas holders and generators, filter pumps, including Geissler's, Sprengle's, Johnson's, with assay furnaces, muffles, crucibles, etc.; combustion furnaces, arrangement for Kjeldahl's nitrogen determinations; Hempel's and Elliott's gas apparatus; a Soleil-Laurent and Schmidt and Hench saccharimeters, colorimeter, reflecting goniometer, Crouch's best binocular microscope, with fittings, etc. In short, the laboratory is well supplied with the latest improved apparatus needed in well established methods of analytical work and original investigation. Our balance room contains new and improved analytical balances of the finest quality.

Remsen's Chemistry is used as a text book in organic chemistry, inorganic being given by lectures. Geology is also taught by lectures.

The department is supplied with books and current chemical literature, to which the students have free access.

DEPARTMENT OF CIVIL ENGINEERING AND PHYSICS.

PROFESSOR NAGLE.
ASSISTANT PROFESSOR SPENCE.

A. CIVIL ENGINEERING.

The Civil Engineering studies begin in the third year, or second class. They are taken up in the following order:

SECOND CLASS—*First Term:* Road making and maintenance, two hours per week. The character of the road surface, as dependent on the traffic and locality, is fully discussed, and the application of various methods of improvement to typical localities in the State considered.

Second Term: Graphical statics, two hours per week. This subject is taught chiefly by lectures, and the principle of the force polygon is alone considered here. The student is required to work up fully the stresses in a number of different types of trusses for symmetrical, unsymmetrical, and wind loads.

Third Term: The entire second class study plane surveying for three hours per week during this term. After the instruments have been described and studied in the class room, they are taken into the field, where the student spends five hours per week in surveying plats, retracing old

PRACTICE IN BUDDING IN THE NURSERY.

lines from the field notes, leveling for profile, etc. He is required to plot on paper at least one of these surveys, and to draw on profile paper the surface line given by notes of instrumental lines run by himself.

Students in civil engineering take also a series of lectures on topographical surveying and mapping, using Colby's topographical protractor in plotting the notes, and Colby's topographical slide rule, Winslow's tables, and Johnson's reduction diagram in reducing the notes.

Text Books: Roads, Streets, and Pavements, *Gillmore;* Graphical Statics, *Merriman* and *Jacoby;* Surveying, *Davies, Winslow.*

First Class—*First Term:* Railroad Engineering, the location, construction, and maintenance of railroads, five hours per week. Five hours per week is also devoted to practice with the instruments in the field, where the student learns how to run out preliminary and location lines, and afterwards to set slope stakes, based on a grade line best suited to the profile. The amount of excavation and embankment is then calculated, and the probable cost of construction determined.

A portion of the term is devoted to practice with the plane table and solar compass. A determination of the latitude and true meridian is also made by means of circumpolar stars.

A short course of two hours per week is also given in sanitary engineering, in which the best methods of house drainage, sewerage and sewage disposal are considered.

Second Term: Mechanics of materials, stresses in roofs and bridges, five hours per week; hydraulic engineering, four hours per week.

Third Term: Mechanics of materials, strength of materials of construction, three hours per week; practice with the testing machines. Stresses in roofs and bridges by analytic and graphic methods, three hours per week; the principles of the force and equilibrium polygons are both employed in determining stresses in framed structures due to fixed and moving loads.

Practice in field engineering is given for five hours per week during about half the term.

A course in bridge and structural designing is given, in which the design for some simple roof truss or non-continuous bridge truss is undertaken, each member of the class being assigned a special truss, upon which he is required to spend about five hours per week in the drawing room, making detailed and shop drawings, showing dimensions of main members and connections, together with a stress sheet for the structure.

Text books: Field Engineer, *Shunk;* Sewers and Drains, *Adams;* Sewage Disposal, *Corfield;* Mechanics of Materials, *Merriman;* Stresses by Graphic Methods, *Merriman and Jacoby;* Hydraulics, *Merriman.*

Graduate Work.—Young men desiring to become successful professional engineers will find it advisable to continue their studies after re-

ceiving the first degree. Under the head of "Graduate Studies" is outlined some of the branches in which advanced work will be given—the work assigned being adapted, in so far as is practicable, to the needs of each student. Designing, shop drawings, the study of projects and review of existing structures will be made a feature of the course. A large portion of the time will be devoted to original designs and investigation.

THESIS.—Each candidate for a degree in the civil engineering course is required to submit an approved thesis on some subject bearing on the work he has had in this department.

B. PHYSICS.

THIRD CLASS—*First Term:* The whole third class take up the study of elementary physics, meeting four hours per week. During this term they study the general properties of matter, mechanics, pneumatics, hydrostatics, accoustics and heat.

Second Term: Optics, electricity, and magnetism.

Third Term: More advanced course in electricity and magnetism. Only members of the mechanical course take this subject.

Text books: *Peck's* Ganot; *Deschnel's* Natural Philosophy, Part III.

EQUIPMENT.

The department is supplied with an excellent assortment of engineering instruments, including the following: One transit with Gurley's solar attachment; one railroad transit; one surveyor's transit; four engineer's Y levels; one drainage level; one Locke's hand level; one solar compass; four other compasses; one plane table; one planimeter; one odometer; one surveyor's cross; one reflecting prism for setting off right angles; one Thatcher calculating instrument; one Colby topographical protractor; one Colby slide rule for stadia reductions; and an abundant supply of tapes, chains, pins, flag poles, leveling rods, stadia rods, etc. The department owns two fine Riehle Bros. testing machines—one of one thousand pounds capacity for cements and mortars, and the other of twenty thousand pounds capacity, arranged for tension, compression and cross-breaking; also several large sized models of various types of trusses and photographs and blue prints, contributed by the King Bridge Company and others.

The supply of physical instruments is fully sufficient for illustrating and verifying the laws enunciated in the text books studied.

The department is provided with a well assorted library on engineering and physical subjects; this is available to the student for reference.

Throughout the department the aim is toward thoroughness, rather than the superficial covering of a large field. The student is encouraged to seek out original methods of proof for the various problems met with. Many numerical problems are assigned when it is particularly desired to impress the methods of applying certain principles.

DEPARTMENT OF DRAWING.

Professor Giesecke.
Assistant Professor Spence.

The following is an outline of the instruction given in this department. The time devoted to each subject can be seen above, under course of study.

Fourth Class—*Free-hand Drawing:* Thompson's Primary and Advanced Free-hand Drawing Books, Nos. 1, 3 and 5.

Penmanship: A system of plain vertical handwriting.

Book-keeping: Double entry book-keeping.

Third Class—*Free-hand Drawing:* Thompson's Advanced Free-hand Drawing Books, No. 5 or No. 7, and Model and Object Book No. 1.

Mechanical Drawing: Plane figures, geometrical problems, lettering and orthographic projections. (Anthony's Mechanical Drawing, Part II).

Second Class—*Descriptive Geometry:* Daily recitations (Faunce's Descriptive Geometry) and practical problems in drawing room.

Mechanical Drawing: Working drawings (detail and general), tracings, and blue prints of machinery.

Kinematic Drawing: A series of problems illustrating common practice.

First Class—*Mechanical Drawing:* Working drawings of engines and boilers for students taking the M. E. course, and of structural work for students in the C. E. course. The latter may select architectural subjects.

Machine Design: Recitations (Low and Bevis Manual of Machine Drawing and Design, supplemented by explanatory lectures) and practical exercises in the drawing room.

Perspective: Thompson's Mechanical Drawing Books Nos. 4 and 5. A perspective drawing of a building or some other structure.

Equipment.—The department is equipped with a good set of skeleton and solid models and plaster casts for free-hand drawing, a complete set of Schroeder's models for descriptive geometry, a dark-room and blue-printing outfit, a number of technical reference books, and all necessary drawing boards, instruments, triangles, scales, and squares for the student's use.

DEPARTMENT OF ENGLISH AND HISTORY.

PROFESSOR HUTSON.
ASSOCIATE PROFESSOR PHILPOTT.
ASSISTANT PROFESSOR RED.

In this department the course extends through the whole college life. Its aim is to make accurate and well-informed scholars. The subjects are taught in parallel lines of progress, and are made to throw light on each other.

I. ENGLISH LANGUAGE AND LITERATURE.

First Year: In the class of this year there is an extended drill in the grammar, in spelling, punctuation, reading, composition, and declamation. The class reads from time to time some famous literary work of simple and vivid narration.

Text books: *Patterson's* Elements of Grammar, *Chittenden's* Elements of English Composition, *Macaulay's* Lays of Ancient Rome.

Second Year: A more detailed and minute study of the grammar is required this year, while practical acquaintance is made with standard works in the literature, to be read and commented on in class, direct contact with literature being considered a necessary prelude to its critical study. Rhetoric is studied toward the close of the year.

Text books: *Patterson's* Advanced Grammar, *Kellogg's* Rhetoric, select poems of Scott and essays of Macaulay.

Third Year: The class of this year studies the higher and idiomatic constructions of English and the history of the language. It also takes a brief course in civil government. Essays, forensic disputations, and original orations constitute part of the work of the year.

Text books: *Lockwood's* Lessons, *Meiklejohn's* English Language, *Young's* Governmental Class Book, select poems and tales.

Fourth Year: This year is devoted to a course of lectures on English literature.

Text books: Select plays of Shakespeare and Marlow.

For reference: The Century Dictionary, *Lounsbury's* History of the English Language, *Taine's* English Literature, *Saintsbury's* Elizabethan Literature, *Morley's* English Literature, *Mrs. Oliphant's* Literature of the Georges.

II. HISTORY.

First Year: The class of this year studies the History of Texas and the History of the United States. Good wall maps furnish a valuable help in these studies.

MECHANICAL ENGINEERING BUILDING.

Text books: *Pennybacker's* Texas, *Chamber's* United States.

Second Year: The study of general history occupies the class of this year. Debates and compositions on historical subjects are frequently assigned as part of the work. The value of collateral reading is thus impressed upon the student.

Text books: *Myer's* General History, with other works for collateral reading.

Third Year: The study of Greek and Roman history, on what is called the "seminary plan," is the work of this year. The class room has excellent maps of the great countries of antiquity.

Text books: *Sheldon's* Greece and Rome, with other works for collateral reading.

Fourth Year: The last year is devoted to the History of England, especial stress being laid on the development of the English constitution, the progress of civilization, and the close connection between the condition of the people and the state of the literature.

Text books: *Green's* History of the English People; *Arabella Buckley's* History of England.

For reference: Histories by *Gibbon*, *Hallam*, *Freeman*, *Stubbs*, *Froude*, *Guizot*, *Ranke*, *Motley*, *Mommsen*, *Percy Greg*.

The College library is emphatically the tool house of this department. Students are urged and encouraged in every way to make large use of it.

Candidates for admission into the fourth class are examined on spelling, grammar, geography and reading. Applicants for admission into the higher classes are examined on the studies already passed over by the classes below.

DEPARTMENT OF HORTICULTURE, BOTANY AND ENTOMOLOGY.

Professor Price.
Assistant Professor Ness.

The design of the course in Horticulture is to combine with the technical work of the department such instruction in related sciences and general education as will best prepare the student to meet the greatest demands of the horticultural industry. Throughout the course instruction is given in subjects of general importance not enumerated below. The first two years the courses in horticulture and agriculture are the same.

ENTOMOLOGY.

Structural — *Third Year, Fall Term:* External anatomy and comparative morphology of the orders and more important families. Practice given in laboratory in dissecting and classifying.

ECONOMIC — *Fourth Year, Spring Term:* Injurious insects and the methods of preventing their depredations. Spraying machinery, insecticides and their application.

Text book: Entomology for Beginners, *Packard*

Reference books: Insecta, *Hyatt* and *Arms. Comstock's* Introduction to Entomology.

BOTANY.

ORGANOGRAPHY—*Second Year, Fall Term:* Gross anatomy, the study of the organs with which plants do their work; as roots, stem, leaves, and flowers. Their various forms and modifications.

SYSTEMATIC—*Second Year, Spring Term:* Nomenclature, classification, description of flowering plants, and the art of collecting, naming, mounting, and preserving them. An herbarium may be required.

HISTOLOGICAL—*Third Year, Fall Term:* Advanced work in structural botany; examining the minute structure of the root, stem, leaf, flowers, and fruit, with compound microscope.

PHYSIOLOGICAL—*Third Year, Winter Term:* Physiology of plants in connection with microscopic work. The student prepares his own slides; making notes, drawings, and employing reagents. In the latter part of the term the student begins the study of cryptogams.

Text books: *Bastin's* College Botany; *Gray's*, Vols. I. and II.; *Wood's* New Class Book of Botany.

Reference books: *Chapman's* Southern Flora; Text Book of Botany, *Bessy; Sach's* Botany; Physiology of Plants, *Vines; Gray's* New Class of Botany; Flora of Western Texas, *Coulter.*

GRASSES AND FORAGE PLANTS—*Spring Term, Fourth Year:* Analysis of important grasses and forage plants. Their uses, habits and cultivation.

Reference books: Grasses of North America, *Beal;* Farmers' Book of Grasses and Forage Plants, *Phares; Veasey's* Bulletins on Grasses.

MYCOLOGY—*Fourth Year, Fall and Spring Terms:* Systematic study of economic fungi in the Fall Term, and in the Spring Term the student makes cultures on media, infects living plants, and prepares and applies fungicides. An herbarium of fungi is required. The subject is taught by lectures.

Reference books: Comparative Morphology and Biology of Fungi, *De Bary; Plowwright's* Monograph of Uredineæ and Ustillagineæ; *Burrill's* Monograph of Uredineæ and Erysipheæ; United States Government and Experiment Station Reports; North American Pyrenomycetes, *Ellis and Everhart.*

HORTICULTURE.

FRUIT CULTURE—*Second Year, Fall Term:* Study of growth, culture, and propagation of the apple, pear, peach, plum, apricot, cherry, etc. Planting and managing orchards.

Text book: *Thomas'* American Fruit Culturist.

Reference books: *Barry's* Fruit Garden; *Downing's* Fruit and Fruit Trees of America.

Olericulture—*Second Year, Spring Term:* Growth, culture, preservation and marketing vegetables. Practice in the gardens and experimental plats.

Text book: Truck Farming for the South, *Oemler.*

Reference book: The Vegetable Garden, *Vilmorin-Andrieux.*

Small Fruit Culture—*Third Year, Spring Term:* Special lectures upon the culture and marketing of strawberries, raspberries, blackberries, currants, etc.

Reference book: Small Fruit Culture, *Fuller.*

Viticulture—*Fourth Year, Fall Term:* Culture, growth, and propagation of the grape and the management of vineyards.

Text book: American Grape Growing and Wine Making, *Husmann.*

Forestry—*Fourth Year, Winter Term:* The management and planting of woodlands. Consideration of the role they play in the economy of nature.

Text book: Elements of Forestry, *Hough.*

Reference book: North American Sylva, *Michaux.*

Landscape Gardening—*Fourth Year, Winter Term:* Designing, planning, and management of lawns. The art of beautifying American homes.

Text book: Ornamental Gardening, *Long.*

The student before graduating submits to the professor in charge a thesis on some horticultural or botanical subject. The department is fairly well equipped. The care of the orchards and vineyards and the experiments with vegetables afford ample practice in field work.

DEPARTMENT OF LANGUAGES.

Professor Bittle.

It is the object of the department to furnish students of the horticultural and civil engineering courses, and others who may desire it, with a practical knowledge of German, Latin, or Spanish, such as will benefit them in the prosecution of a scientific career.

To this end, the text books used and the method of imparting instruction are practical. Latin is taught as an essential to a thorough understanding of English; German, because it is a treasure house from which the general student can not afford to be shut out; Spanish, in view of the rapidly growing intercourse between us and the Latin Republics south of us; all of them, because systematology and scientific nomenclature are undefinable without a knowledge of foreign languages.

Students coming to us, therefore, from the high schools of the State find here the opportunity to continue their linguistic studies by the side of Agricultural and Mechanical branches, to which they lend effective aid.

TEXT BOOKS.

In Spanish, De Tornos' and Ybarra's Grammars, with references to Knapp, and selections from reading from various sources.

In German, Joynes-Meissner's and Sheldon's Grammars, with selections in reading, suited to the student's advancement.

In Latin, Chase and Stuart's Grammars, with reference to more systematic courses, and readings from Cæsar, Virgil, Cicero, etc., as the exigences of the course permit.

DEPARTMENT OF MATHEMATICS.

PROFESSOR PURYEAR.
ASSOCIATE PROFESSOR SMITH.
ADJUNCT PROFESSOR BANKS.

Instruction in this department is given by the use of approved text books, supplemented by oral explanations and lectures. The course is designed to be thorough rather than extensive. The student's knowledge of the subject studied is tested daily at the blackboard, and he will be required to apply the principles taught to the solutions of practical problems. Written solutions of selected problems will be required at stated intervals.

The subjects pursued are as follows;

First Year—Arithmetic, Elementary Algebra.

Second year—Elemetary Algebra, Geometry.

Third year—Advanced Algebra, Geometry, Trigonometry.

Fourth year—Analytical Geometry, Mechanics, Calculus.

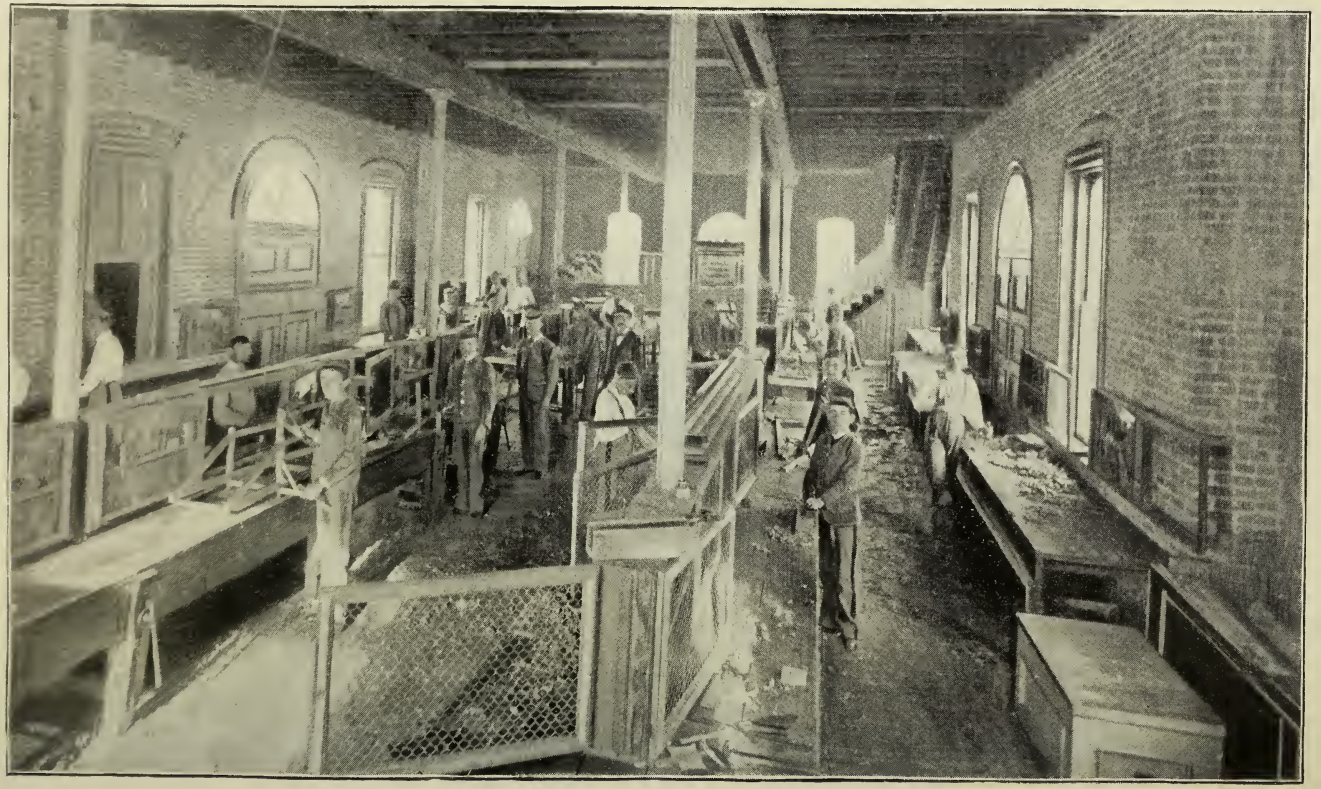
For instruction in geometry the department is supplied with a full set of Schroeder's models, imported for this institution.

Text books: Arithmetic, *Greenleaf;* Algebra, *Wells;* Geometry, *Wentworth;* Trigonometry, *Wells;* Analytical Geometry, *Peck;* Mechanics, *Wood;* Calculus, *Peck.*

SPECIMEN EXAMINATION PAPERS.

Candidates for admission to the Second Class will be examined on arithmetic, plane geometry, and algebra through quadratic equations.

The following are specimen examinations given to candidates for the fourth and third classes:



CARPENTER SHOP.

ENTRANCE EXAMINATION FOR FOURTH CLASS.

Arithmetic—Define least common multiple.

Find the least common multiple of 16, 140, 210.

Find the prime factors of 2445.

Add $1\frac{1}{2}$, $2\frac{2}{3}$, $3\frac{3}{4}$, $4\frac{4}{5}$.

From $25\frac{7}{10}$ take $14\frac{13}{15}$.

Change to a common fraction and reduce to its lowest terms .5625.

From $11\frac{3}{40}$ lbs. Troy wt. take 10 lbs. 8 oz. 8 pwt.

Reduce 4 oz. 3 pwt. 19.8 gr. to grains.

ENTRANCE EXAMINATION FOR THIRD CLASS.

Arithmetic—Write decimally one thousand and fifty hundred thousandths.

Find the value of $\dfrac{7\frac{4}{11} - 5\frac{1}{10}}{4\frac{1}{3} \text{ of } 2\frac{1}{5}}$

Find the greatest common divisor of 2572 and 396.

To $\frac{7}{9}$ of a mile add $\frac{3}{16}$ of a yard.

Find the discount and the present worth of a note for $275, payable in $5\frac{1}{2}$ months, discounted at 10 per cent per annum.

Find the interest at 8 per cent on $425 for 2 years, 5 months, 18 days. What is the amount?

Change to decimals and add 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$.

A wine merchant sells wine at $1.20 per gallon, thereby losing 20 per cent; at what price must he sell in order to gain 10 per cent?

How much carpet 1 yard wide will be required for a room 16 feet by 18 feet, and what would be the cost at $1.37\frac{1}{2}$ per yard?

What is the unit of measure in the French system; and how was it determined?

Algebra.—Find the numerical value of $\{[(a+b)c-d]x+y\}y$, when $y=6$, $x=8$, $a=2$, $b=3$, $c=4$, $d=5$.

Divide $x^4 - 4x^3y + 6x^2y^2 - 4xy^3 + y^4$ by $x^2 - 2xy + y^2$.

Find the factors, the greatest common divisor, and the least common multiple of $a^4 - b^4$ and $a^3 + 2a^2b + ab^2$; also, of $x^2 + 2x - 3$ and $x^3 + 8x^2 + 15z$.

Explain each operation fully.

Divide $\dfrac{x^4 - y^4}{x^2y}$ by $\dfrac{x}{y} + \dfrac{y}{x}$

Given $\dfrac{4x}{5-x} - \dfrac{4(5-x)}{x} = \dfrac{15}{x}$; find value of x.

Given $\dfrac{a}{b+y} = \dfrac{b}{3a+x}$; and $ax + 2by = d$; find values of x and y.

DEPARTMENT OF MECHANICAL ENGINEERING.

Professor Whitlock.
Assistant Professor Bray.
Instructor, Mr. Lewis.

This department is intended so to combine theory and practice that, after deriving a theoretical knowledge of a subject from the text books of standard writers, the student may go into the shop and apply that knowledge in a thoroughly practical manner. With this theoretical preparation the mind grasps the salient points and avoids the difficulties of the more practical part of the work. The work is carried on by aid of practice in the shops and drawing room, and by text books and lectures.

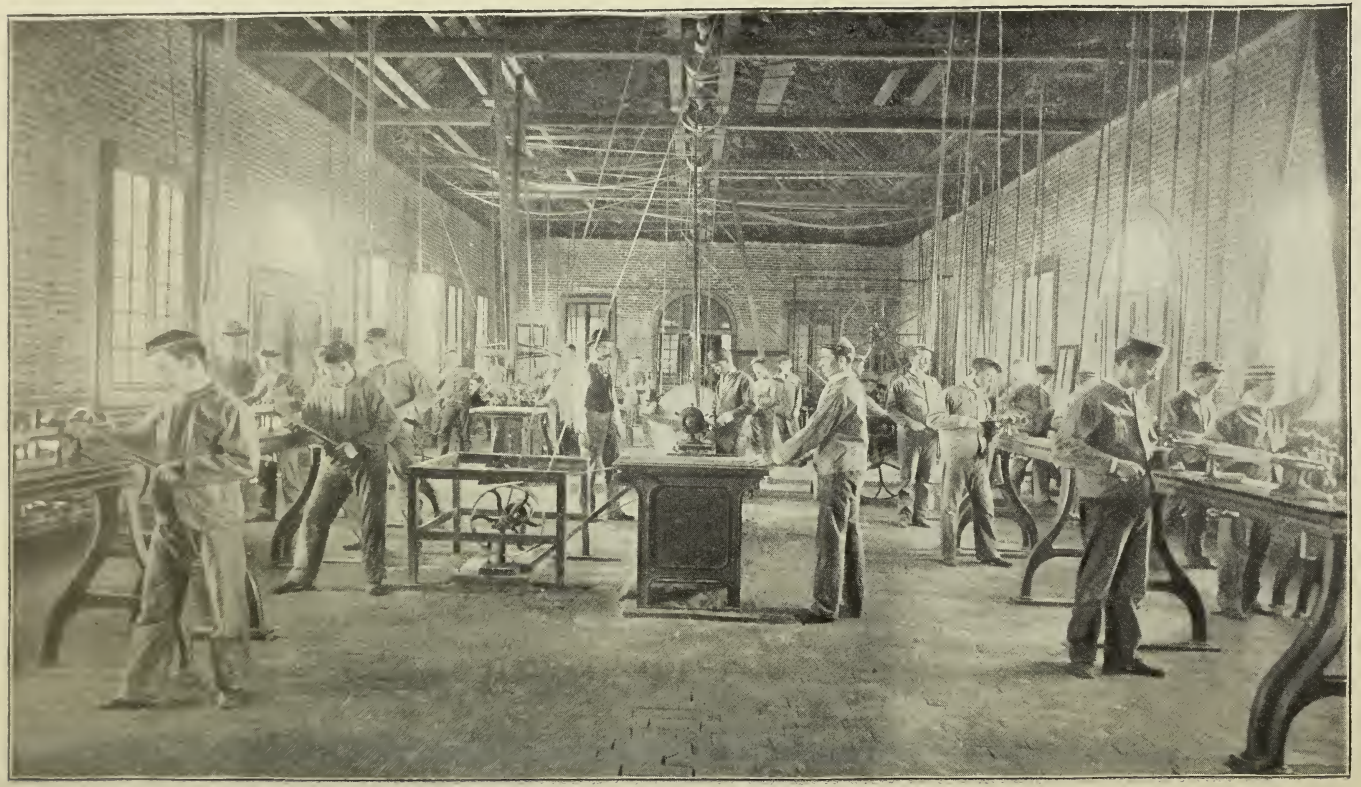
First the machinery of transmission is taken up and discussed, and especial attention paid to shafting, belts, speed pulleys, gear wheels, and kindred subjects. These lead the way to the higher forms of mechanism, and later the steam engine in its general principles and various forms is studied and discussed.

As stated above, the work in the class room is supplemented in every possible way by showing the student the practical application of these principles in the machinery used at the College.

Before graduating from this department, each student must place in the hands of the professor in charge a thesis treating of some mechanical subject, which shall be declared satisfactory by him.

SHOPS AND SHOP WORK.

The Machine Shop is a one-story brick building, 80x35 feet, and is joined at one end by the Blacksmith Shop, which is also brick, 20x35 feet. At the other end it is in connection with the Carpenter Shop, and above the latter are class rooms, and model room fitted up for drawing and designing. This two-story building is also of brick, and was planned and built especially for this department. In beginning the practical work the student enters the Carpenter Shop, which is equipped with sixty sets of tools and benches. Here each student has his own set of tools when at work, and is held responsible for their condition. These tools are those which are in common use among carpenters, such as hammer, cross cut and panel saws, square, mallet, chisels, gauge, planes, and dividers, and must be kept in order by the student using them. Thus each student is taught in the beginning of his work not only the use of the tools, but also the importance of keeping them in good order, and in their proper places. The work in this department begins with the simplest exercises, which consist mainly in making those joints which are in common



MACHINE SHOP.

use. Each of these exercises depends more or less on those preceding it, and becomes more and more difficult as it nears the end, thus carrying the student from "squaring" a piece of wood to the construction of a small bridge truss. The work is carried on from drawings, similar to those found in any of our shops, and thus the student learns not only to read mechanical drawings, but to construct the article wanted with only such drawings for a guide.

Having finished the wood work and acquired a knowledge of edged tools, the student is transferred to the Blacksmith Shop. Here he finds the same ideas of responsibility and good order. There are thirteen forges, supplied with a blast from a power blower, which is run by an engine built and set up by the graduating class of 1888. Here, as in the Carpenter Shop, the first exercises are very simple, becoming more and more difficult as they proceed, until, at the end, the student has made welds of different kinds, a chain with hook and swivel, and has forged out and tempered several tools, such as engine lathe tools, and cold chisels. After this a move is made into the Machine Shop, where are found sixteen wood turning lathes. On these he receives instruction in both inside and outside turning, everything being made according to drawings furnished from the tool room. Then follows instruction in the use of iron working machinery, for which there is the following equipment: Six engine lathes, planer, drill, shaper, and milling machine. With these machine tools are taught the principles of cutting and shaping wrought and cast iron, steel, and brass. Throughout the course the student receives systematic instruction, and the work is so graded as to bring into use as far as possible those principles which have been taught him in the class room. The instruction throughout the course is made as practical as possible, and at the same time is of such a nature as to call for intelligent thought in connection with the manual labor. Special attention is called to the fact that all work is made, as far as possible, from drawings similar to those which the student will be called upon to use in any of our first class machine shops, thus compelling him to think for himself and avoid becoming a mere automaton. All tools are furnished by the College with the exception of a two-foot rule, which may be obtained at the book store, College.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

Professor Morse.

The instruction in this department is in conformity with the act of Congress, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

An officer of the regular army is detailed by direction of the President

of the United States to carry out this requirement of the act in question, and the necessary arms, accoutrements and ammunition are furnished by the general government without cost to the College.

During the fall and spring terms practical military instruction is given in infantry and artillery drills, rifle firing, and the duties of guards and sentinels. During the winter term all military exercises are suspended except the necessary guard. A course of lectures is delivered to the first class, embracing the duties of guards and sentinels, military signaling and engineering, military law, the preparation of the usual returns and reports pertaining to a company, the organization and administration of the United States Army, and the elements of the art and science of war.

During this term the second class receives instruction in the section room in infantry tactics.

While the instruction in this department is as thorough as practicable in the limited time allowed, in liberal compliance with the requirements of the act of Congress endowing the College, it is not proposed to graduate soldiers. Practical military exercises are held at such hours as not to conflict with academic duties of students. The physical training of such exercises has the effect of straightening and strengthening the students, giving them an erect carriage and graceful bearing.

The military system is the means of enforcing discipline and securing regularity in the performance of academic duties, and tends to inculcate in the students that habit of truthfulness and manliness of character which characterize young men as gentlemen.

DEPARTMENT OF VETERINARY SCIENCE.

PROFESSOR FRANCIS.

The design of the course in Veterinary Science is two-fold. First, to acquaint the agricultural students with the diseases of our domestic animals; and second, to train their minds in sound and systematic methods of reasoning from effect to cause. To accomplish this the instruction begins with the study of comparative physiology. This is presented by lectures, recitations, and demonstrations on the living subject. Comparative anatomy is treated in a similar manner. The horse is taken as the type, and dissections are made during the winter months.

This is presented in such a manner as not only to acquaint the student with the structure of the horse, but to teach him *how* to study organic bodies. Veterinary medicine and surgery are presented by systematic lectures on the diseases of animals, and their treatment.

Materia Medica and Therapeutics are given considerable attention.

These lectures are illustrated by a discussion of the drugs used by the Veterinarian, and the methods of compounding and administering the

BATTALION INSPECTION.

same. Laboratory work consists in studying the microscopic structure of the tissues, the methods of hardening, sectioning, staining, and mounting. Each student is provided with a first class microscope, ranging from 50 to 400 diameters, and all necessary requisites for prosecuting the work. The department is equipped with Azoux's model of the horse, complete, and several special pieces of the same material. We have also the skeleton of man, horse, pig, goat, and various other animals, mounted. There are also a considerable number of skulls and other bones, both healthy and diseased. There is also quite a collection of parasites, tumors, monstrosities, dissected preparations, and surgical instruments belonging to the department. The library of the department is quite respectable, and contains all the standard works in English, and some in other languages. The total value of the equipment is about $3000.

ALUMNI.

ALUMNI ASSOCIATION.

(Organization for 1893-94.)

J. B. Hereford, 1887.....President.
J. H. O'Bar, 1893.....First Vice-President.
P. S. Tilson, 1888.....Second Vice-President.
L. E. Allen, 1887.....Third Vice-President.
E. W. Hutchinson, 1889.....Secretary and Treasurer.
D. Cushing, 1891.....Editor College Journal.

EXECUTIVE COMMITTEE.

W. Wipprecht, 1884, J. B. Hereford, 1887, E. W. Hutchinson, 1889.

From the opening of the College in 1876 to its reorganization in 1880, the studies were elective. There were many graduates during that period in one or more departments.

Names of deceased alumni are marked †.

The present occupations of the alumni are given as far as known, but information as to these is not readily accessible, and errors may be found in that given here. The alumni are requested to aid the president in making their roll as complete as possible, as a means of conveying to each trustworthy intelligence of all the others.

1878.

GERMAN.—R. A. Rogers, W. A. F. Trenckman.
LATIN.—R. A. Rogers.

1879.

LATIN.—A. Cunningham, P. L. Downs, F. W. Fort, J. R. Downs, D. M. Jack, E. Y. Mullins, R. A. Rogers, W. M. Sleeper.

GREEK.—A. Cunningham, P. L. Downs, F. W. Fort, R. A. Rogers, W. M. Sleeper.

GERMAN.—S. Baker, A. L. Banks, W. H. Brown, M. L. Chambers, A. Cunningham, P. L. Downs, J. R. Downs, F. W. Fort, T. A. Fuller, D. M. Jack, L. J. Kopke, E. Y. Mullins, F. A. Reichardt, Charles Rogan, R. A. Rogers, W. M. Sleeper, H. G. Smythe, W. A. F. Trenckman, K. M. Van Zandt.

FRENCH.—J. J. Baker, E. G. Cochran, W. A. F. Trenckman.

SPANISH.—J. J. Baker, T. H. Brown, D. Campbell, J. H. Haden, W. A. F. Trenckman.

MENTAL AND MORAL SCIENCE.—J. J. Baker, M. Black, E. G. Cochran, W. A. F. Trenckman, D. M. Jack, R. A. Rogers.

ENGLISH LANGUAGE AND LITERATURE.—M. Black, E. G. Cochran, J. J. Baker, D. M. Jack, Charles Rogan, R. A. Rogers, W. A. F. Trenckman.

MATHEMATICS.—A. Cunningham, L. J. Kopke, W. M. Sleeper.

CHEMISTRY AND NATURAL SCIENCE.—Charles Rogan, A. Cunningham, W. A. F. Trenckman.

1880.

ENGLISH.—C. S. Miller, F. F. Bledsoe, D. E. Alexander, E. E. Fitzhugh, T. E. Blakemore.

GREEK.—F. F. Bledsoe.

LATIN.—D. E. Alexander, C. S. Miller, E. E. Fitzhugh.

MATHEMATICS.—E. E. Fitzhugh, D. E. Alexander, Thomas E. Blakemore.†

1880.

L. F. Kopke, C. E.....Chief Engineer G. B. & K. C. Ry.
W. H. Brown, C. E.....Lawyer.

1881.

G. H. Dugan.....Stockraiser.

1882.

Name.	Course.	Occupation.
M. F. Armstrong	Mechanical	Lumber Manufacturer.
Searcy Baker	Mechanical	Merchant.
J. M. Buford	Mechanical	Druggist, Physician.
F. R. Von Biberstein†	Mechanical	
J. R. Cravens	Mechanical	Civil Engineer.
C. S. Graves	Mechanical	Chief Clerk Aud. Dept. R. R.
S. A. Hare	Mechanical	Lawyer.
R. S. Lipscomb	Mechanical	Physician.
David Rice	Mechanical	Lumber Manufacturer.
Robert Sawyer	Mechanical	Lumber Dealer.
Aaron Talbot	Mechanical	Farmer.
D. H. Watson	Mechanical	Horticulturist.
J. C. Caldwell†	Mechanical	

GUARD MOUNTING.

1883.

Name.	Course	Occupation.
J. F. Edwards	Mechanical	Merchant.
Osborne Kennedy	Mechanical	Lawyer.
H. J. Miller	Mechanical	Merchant.
W. E. Mosley†	Mechanical	
A. T. Patrick	Mechanical	Lawyer.
W. L. Tuller	Mechanical	Real Estate Agent.
J. M. Wesson†	Mechanical	

1884.

Name.	Course.	Occupation.
G. W. Roach	Mechanical	Superintendent City School.
W. Wipprecht	Agricultural	Druggist.
J. L. Gray	Mechanical	Civil Engineer.
T. B. McQueen	Mechanical	Merchant.
N. A. Dawson	Mechanical	Lawyer.
F. C. Von Rosenberg	Mechanical	Lawyer.
B. C. Makensen	Mechanical	Teacher.
A. L. Shirley	Agricultural	Railroad Agent, Merchant.
R. E. Pennington	Agricultural	Lawyer.
G. Giesecke	Mechanical	Sec. and Gen. Mangr. San Antonio Gas Works.
R. B. Green	Mechanical	Merchant.
W. B. Philpott	Mechanical	Associate Prof. A. & M. C.
B. E. Knolle	Mechanical	Physician.
V. Andrews	Mechanical	Teacher.

1885.

Name.	Course.	Occupation.
W. Wipprecht, B. S. A	Post graduate	Druggist.
J. N. Davis	Mechanical	Superintendent City Schools.
F. L. Pfeuffer	Mechanical	Merchant.
W. Whitaker	Mechanical	Contractor.
T. D. Rowell	Agricultural	Lawyer.
F. Carruthers	Agricultural	Teacher.
F. E. Dudley	Mechanical	Druggist.
L. Makensen	Mechanical	Route Agent.
C. H. Pescay	Mechanical	Insurance Adjuster.
S. Hough	Mechanical	
E. W. Spann†	Mechanical	

1886.

Name.	Course.	Occupation.
D. Adriance	Agricultural	Assoc. Prof. A. & M. College.
F. E. Giesecke	Mechanical	Prof. Drawing A. & M. College.
M. D. Tilson	Mechanical	Civil Engineer.
H. L. Wright	Mechanical	Manager Palestine Water and [Power Co.
I. A. Cottingham	Mechanical	Civil Engineer.
E. H. Whitlock	Mechanical	Mechanical Engineer.
J. W. Carson	Agricultural	Asst. Agl. Exp. Station.
C. L. Burchard	Mechanical	Cashier in Bank.

Name.	Course.	Occupation.
J. M. Carson	Agricultural	Asst. Prof. Agr., A. & M. Col.
W. F. Woodward	Mechanical	Stock Raiser.
C. C. McCulloch	Mechanical	Surgeon U. S. Army.

1887.

Name.	Course.	Occupation.
G. A. Rogers	Mechanical	Cashier in National Bank.
F. L. Fordtran	Agricultural	Physician.
J. H. Freeman	Mechanical	Proprietor Livery Stable.
H. J. McNair.	Mechanical	Railroad Office.
T. B. West.	Mechanical	Railroad Office.
L. E. Allen	Mechanical	Bookkeeper.
E. R. Nolle	Mechanical	Physician.
J. B. Hereford	Mechanical	Special Insurance Agent.
H. C. Hare	Mechanical	Lawyer.
E. Gruene	Mechanical	Teacher.

1888.

Name.	Course.	Occupation.
W. H. Allen	B. S. A	Physician.
Paul Braun	B. M. E	Draughtsman, S. P. Shops, Houston.
R. H. Dietert	B. M. E	Machinist H. & T. C. Shops, Houston.
F. C. Hoffman	B. M. E	Watchmaker.
H. F. Jonas	B. C. E	Draughtsman S. P. Ry., B. & B. Division, Houston.
N. L. Josey	B. S. A	Book-keeper.
A. P. Knolle		Physician.
W. H. Knolle	B. C. E	Physician.
W. O. R. Pfeuffer	B. S. A	Student.
F. Rennert	B. S. A	Bookkeeper.
Z. M. Shirley	B. M. E	Lawyer.
E. J. Smith	B. S. A	Lawyer.
W. W. Stewart	B. M. E	Miller.
M. S. Swain	B. S	Lawyer.
P. S. Tilson	B. S. A	Asst. Prof. A. & M. College.
W. M. Wood	B. C. E	Civil Engineer.
W. A. Wurzbach	B. C. E	Lawyer.

1889.

Name.	Course.	Occupation.
Louis Daniel Amsler	B. M. E	Miller.
Charles A. Buckman	B. C. E	Engineer.
Lawrence Burroughs Burck	B. C. E	Commercial Traveler.
William Elizabeth Drisdale	B. S	Physician.
John D. Fearhake	B. C. E	Lawyer.
Edward Walthall Hutchinson	B. C. E	Bookkeeper A. & M. College.
Walter Toole Jones	B. C. E	Civil Engineer.
John Frank Kuehne	B. M. E	Bank Clerk.
William Wirt K. Leggett	B. C. E	Civil Engineer.

DRESS PARADE.

Name.	Course.	Occupation.
Robert Mabry	B. C. E.	Commercial Traveler.
William Brady Merritt	B. S. A.	Lawyer.
Earl Sloan Middlebrook	B. C. E.	Foreman Lumber Mill.
Frank Lillard Montgomery	B. S. A.	Student.
Helge Ness	B. S.	Asst. Prof. Hort., A. & M. Col.
Joseph Francis Nichols	B. S.	Lawyer.
James Routte Nichols	B. S. A.	Physician.
Benjamin Freeman Rogers	B. C. E.	Merchant.
Merideth William Shirley	B. M. E.	Merchant.
William Morton Shirley	B. C. E.	Farmer.

1890.

Name.	Course.	Occupation.
D. Adriance, M. S	Post Graduate	Assoc. Prof. A. & M. College.
F. E. Giesecke, M. E.	Post Graduate	Prof. Drawing A. & M. College.
C. C. McCulloch, C. E	Post Graduate	Surgeon U. S. Army.
W. B. Philpott, M. S.	Post Graduate	Assoc. Prof. A. & M. College.
Anderson, William Dilworth	B. S. A.	City Secretary.
Brittingham, Wm. Frank, Jr.†	B. C. E.	
Bockus, Ulysses	B. M. E	Coahuila Coal Co.
Flynt, Henry Calvin	B. S. A.	Farmer.
Hanschke, Robert, Jr.	B. M. E.	Student.
Hernstadt, Sidney Johnson	B. C. E.	Civil Engineer.
Hopkins, Sam Houston	B. S. A.	Lawyer.
Kyle, Joseph Allen	B. S. A.	Physician
Rudasill, William Stone	B. C. E.	
Ragsdale, James William	B. S. A.	Lawyer.
Radford, John Seth	B. S. H.	Merchant.
Schmidt, Charles Louis	B. M. E	Machinist.
Van Zandt, Richard Lipscomb,	B. C. E.	Clerk in Bank.
Wangemann, Arthur Edward,	B. S. A.	Real Estate Agent.

1891.

Name.	Course.	Occupation.
Ahrenbeck, William T.	B. M. E.	Student.
Cushing, Dan	B. M. E.	Southern Pacific Railway.
Dashiell, Walter R.	B. C. E.	Student.
Field, Herbert Y.	B. S. A.	Bookkeeper.
Henderson, Hal	B. S. A.	
Luckett, William H.	B. S. A.	Physician.
Littlejohn, Robert G.	B. C. E.	Insurance Agent.
McCormick, George, Jr.	B. M. E.	Draughtsman So. Pacific Ry.
Merriwether, William T	B. C. E.	Civil Engineer.
Middlebrook, Robert M.	B. M. E	Lawyer.
Morrill, Clifford R.	B. C. E.	Draughtsman So. Pacific Ry.
Nichols, William L.	B. C. E.	
Pfeuffer, Ulrich S.	B. C. E.	Clerk.
Welhausen, Charles B.	B. M. E.	Merchant.
Whealan, James J.	B. M. E.	Machinist, H. & T. C. R. R.
Whitener, Harry L.	B. S. A.	Physician.

Name.	Course.	Occupation.
Puckett, J. H.	Spec'l in Chem.	Student.
Read, W. K.	Spec'l in Chem.	Student.

1892.

Name.	Course.	Occupation.
P. S. Tilson, M. S.	Post Graduate.	Asst. Prof. A. & M. College.
Adams, F. L.	B. S. A.	Student.
Altgelt, E. J.	B. C. E.	Bank.
Beesley, Walter S.	B. C. E.	Teacher.
Beyer, Frederick C.	B. M. E.	Engineer and Fireman.
Bailey, Charles C.	B. C. E.	Merchant.
Buhler, Chris W.	B. C. E.	Civil Engineer.
Buford, Frank L.	B. C. E.	City Engineer.
Boykin, Rufus E.	B. M. E.	Teacher.
Cook, Edgar A.	B. M. E.	South Bend Iron Works.
Cox, DeWitt S.	B. C. E.	Journalist.
Cottingham, Wesley P.	B. C. E.	Student.
Ellis, Billie V.	B. S. A.	Physician.
Floyd, J. F., Jr.	B. M. E.	Draughtsman, Eng. Office.
Gurley, David R., Jr.	B. C. E.	
Giesecke, William E.	B. M. E.	Draughtsman, Archt. Office.
Grupe, George	B. M. E.	
Moore, Rob.	B. S. A.	Druggist.
Moore, Tom E.	B. S. A.	Merchant.
Neathery, Dan E.	B. S. A.	Merchant.
Ortiz, Jose A.	B. C. E.	
Ratchford, William P.	B. M. E.	Asst. Engineer.
Schumacher, Henry C.	B. C. E.	Clerk in Bank. [do Seminary.
Sauvignet, Edmund H.	B. S. A.	Prof. Modern Languages Lare-
Wright, Edgar	B. C. E.	Student.
Watkins, W. A.	B. C. E.	
Guenther, F. E.	Spec. in Chem.	Student.

1893.

Name.	Course.	Occupation.
Burgess, R. J.	B. S. A.	Student.
Hutchinson, O. D.	B. S. A.	Student.
Hawkins, J. W.	B. S. A.	Bookkeeper.
Kyle, T. M.	B. M. E.	
Lewis, L. L.	B. S. A.	Student.
Mitchell, W. H.	B. C. E.	
O'Bar, J. H.	B. S. A.	Teacher.
Parsons, B. C.	B. S. H.	
Pearson, H. A.	B. C. E.	
Perlitz, W. E.	B. C. E.	Student.
Rike, H. M.	B. C. E.	
Rollins, C. W.	B. C. E.	Teacher.
Short, J. L.	B. S. A.	Student.
Weidel, Jos.	B. C. E.	Draughtsman.
Watson, W. D.	B. S. A.	
Wilson, W.	B. C. E.	

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS.

This College owes its origin to

An Act Donating Public Lands to the several States and Territories which may Provide Colleges for the Benefit of Agriculture and the Mechanic Arts.

SECTION 1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That there be granted to the several States, for the purposes hereinafter mentioned, an amount of public land, to be apportioned to each State, a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty; provided, that no mineral lands shall be selected or purchased under the provisions of this act.

SEC. 2. And be it further enacted, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one-quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said States shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public lands subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this act, land scrip, to the amount in acres for the deficiency of its distributive share; said scrip to be sold by said States and the proceeds applied to the uses and purposes prescribed in this act, and for no other use or purpose whatsoever; provided, that in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said land scrip upon any of the unappropriated lands of the United States subject to sale at private entry at one dollar and twenty-five cents or less per acre; and, provided further, that no more than one million acres shall be located by such assignees in any one of the States; and, provided further, that no such location shall be made before one year from the passage of this act.

SEC. 3. And be it further enacted, That all the expenses of management, superintendence and taxes from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. And be it further enacted, That all moneys derived from the sale of the lands aforesaid, by the States to which the lands are apportioned, and from the sale of land script hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or some other safe stocks, yielding not less than 5 per centum upon the par value of said stocks, and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in section 5 of this act),

and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this act. to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

SEC. 5. And be it further enacted, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which, as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts :

First. If any portion of the fund invested, as provided by the foregoing section, or any portion of the interest thereon, shall, by any action or contingency, be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund may remain undiminished, and the annual increase shall be regularly applied without diminution to the purposes mentioned in the fourth section of this act, except that a sum not exceeding 10 per centum upon the amount received by any State under the provisions of this act may be expended for the purchase of lands for sites or experimental farms, wherever authorized by the respective Legislatures of said States.

Second. No portion of said fund, nor the interest thereon, shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

Third. Any State which may take and claim the benefit of the provisions of this act shall provide, within five years, at least not less than one college, as described in the fourth section of this act, or the grant to such State shall cease, and said State shall be bound to pay to the United States the amount received of any lands previously sold, and that the title to purchasers under the State shall be valid.

Fourth. An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their costs and results, and such other matters, including State industrial and economical statistics, as may be supposed useful, one copy of which shall be transmitted by mail free by each to all the other colleges which may be endowed under the provisions of this act, and also one copy to the Secretary of the Interior.

Fifth. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the State at the maximum price, and the number of acres proportionately diminished.

Sixth. No State, while in a condition of rebellion or insurrection against the government of the United States shall be entitled to the benefits of this act.

Seventh. No State shall be entitled to the benefits of this act unless it shall ss its acceptance thereof by its legislature within two years from the date of its approval by the President.

SEC. 6. And be it further enacted, That land scrip issued under the provisions of this act shall not be subject to location until after the first day of January, one thousand eight hundred and sixty-three.

SEC. 7. And be it further enacted, That land officers shall receive the same fees for locating land scrip issued under the provisions of this act as is now allowed for the location of military bounty land warrants under existing laws; provided, their minimum compensation shall not be thereby increased.

BATTALION OF CADETS IN LINE.

SEC. 8. And be it further enacted, That the governors of the several States to which scrip shall be issued under this act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

And to the following amendment:

An act to amend the fifth section of an act entitled "An act donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," approved July 2, eighteen hundred and sixty-two, so as to extend the time within which the provisions of said act shall be accepted and such Colleges established.

1. *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the time in which the several States may comply with the provisions of the act of July 2, eighteen hundred and sixty-two, entitled "An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," is hereby extended so that the acceptance of the benefits of the said act may be expressed within three years from the passage of this act, and the colleges required by the said act may be provided within five years from the date of filing of such acceptance with the Commissioner of the General Land Office; provided, that when any Territory shall become a State and be admitted into the Union, such new State shall be entitled to the benefits of said act of July 2, eighteen hundred and sixty-two, by expressing acceptance therein required within three years from the date of its admission into the Union, and providing the college or colleges within five years of such acceptance, as prescribed in this act; provided further, that any State that has heretofore expressed its acceptance of the act herein referred to shall have the period of five years within which to provide at least one college, as described in the fourth section of this act, after the time for providing said college, according to the act of July 2, eighteen hundred and sixty-two, shall have expired.

Approved July 23, 1865.

By joint resolution, approved November 1, 1871, the Legislature of Texas formally accepted the provisions of the congressional acts, and the State received from the general government script for 180,000 acres of public land, the proceeds of which constitute the present permanent endowment fund of this College, and is in Texas 7 per cent gold frontier defense bonds, to the amount of $174,000.

The Legislature fulfilled its obligations by passing "An act to provide for the establishment of an Agricultural and Mechanical College of Texas," approved April 17, 1871, and by making liberal successive appropriations (aggregating $187,000) for the buildings and equipments necessary for putting the institution in operation. And the county of Brazos secured its location within its limits by donating to the State the present College farm, a tract of 2416 acres, five miles south of the town of Bryan.

Finally, the Constitution of 1876, article VII, provided: "Section 3. The Agricultural and Mechanical College of Texas, established by the act of the Legislature, passed April 17, 1871, located in the county of Brazos, is hereby made and constituted a branch of the University of Texas, for instruction in agriculture, the mechanic arts, and the natural sciences connected therewith."

The College was formally opened for the reception of students October 4, 1876.

The Constitution of Texas provides that taxes may be raised for the maintenance and support of the College.

The following act of the Legislature of Texas is now the law governing the College:

An Act regulating the government of the Agricultural and Mechanical College of Texas, as approved March 9, 1875, and amended March 30, 1881.

I. The Board of Directors of said College shall consist of five members.

II. The Directors provided for in the preceding article shall be appointed by the Governor, to be selected from the different portions of the State, and shall hold office for six years or during good behavior, and until their successors are qualified.

III. The Governor shall be authorized to call said Board together after their appointment, and said Board shall at their first meeting elect a president of the Board, who shall thereafter be authorized to call said Board together for the transaction of business whenever he deems it expedient, and a majority of said Board shall constitute a quorum for the transaction of business.

IV. Each of said Directors shall receive their actual expenses incurred in attending the meetings of the Board, to be paid out of the interest of the University fund, on accounts certified by them respectively to be correct, and approved by the Governor.

V. The Secretary of State shall forward a certificate to each Director within ten days after his appointment, notifying him of the fact of such appointment; and should any Director so appointed and notified fail for ten days to give notice to the Governor of his acceptance, his appointment shall be deemed void and his place filled as in case of vacancy.

VI. The Board of Directors shall appoint the President and Professors of the College, and such other officers as they may think proper to put the College into successful operation, and shall make such by-laws, rules and regulations for its government as they deem meet and proper for that purpose, and shall regulate the course of study, rates of tuition, manner of performing labor, and the kind of labor to be performed by the students, together with the course of discipline necessary to enforce the faithful discharge of all the duties of all officers, professors and students, and shall have same printed and circulated for the benefit of the people of the State and officers and students of the College.

VII. The Board of Directors shall elect a Secretary of the Board, whose duty it shall be to keep in a well-bound book all the proceedings had by this Board, and he shall be allowed by said Board such compensation as they may allow; provided, that the same does not exceed five hundred dollars per annum.

VIII. The interest on the amount of one hundred and seventy-four thousand dollars in 7 per cent gold interest-bearing frontier bonds of Texas, now in the

State treasury to the credit of the College, being set apart for that purpose, shall be drawn by the Board of Directors on vouchers audited by the Board, or approved by the Governor and attested by the Secretary, and on filing such vouchers the Comptroller shall draw his warrant on the State treasury for the same, from time to time as they may be needed, to pay the directors, officers and professors of the College.

The following joint resolution was passed by the Sixteenth Legislature:

Joint resolution authorizing the State Librarian to turn over to the Agricultural and Mechanical College of Texas specimens of minerals and other geological specimens in the geological department in said library in certain cases, and copies of all public documents of the State, published for distribution, and all apparatus belonging to the old geological survey.

SECTION 1. *Be it resolved by the Legislature of the State of Texas*, That the State Librarian be and he is hereby authorized and required to turn over to the Agricultural and Mechanical College of Texas the duplicate specimens in the hands of the agent of the International Railroad Company of all minerals and other geological specimens in the geological department in said library, and copies of all public documents of the State published for distribution, and apparatus belonging to the old geological survey, for the use and benefit of said College.

SEC. 2. That said librarian be required to take an inventory of all specimens thus turned over to said College by him, and file the same in his office.

SEC. 3. The near approach of the close of this session of the Legislature, and the pressing need of geological specimens at said College for the better instruction of its pupils, creates an imperative public necessity for the suspension of the constitutional rule requiring this resolution to be read on three several days; therefore be it further resolved, that the constitutional rule be suspended and this resolution take effect and be in force from and after its passage.

Approved July 9. A. D. 1879.

An Act to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress, approved July second, eighteen hundred and sixty-two.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That there shall be, and hereby is, annually appropriated out of any money in the treasury not otherwise appropriated, arising from the sale of public lands, to be paid as hereinafter provided, to each State and Territory, for the more complete endowment and maintenance of colleges for the benefit of agriculture and the mechanic arts, now established, or which may be hereafter established, in accordance with an Act of Congress, approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirtieth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years, by an additional sum of one thousand dollars over the preceding year; and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life and to the facilities for such instruction;

provided, that no money shall be paid out under this act to any State or Territory for the support or maintenance of a college where a distinction of race or color is made in the admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act, if the funds received in such State or Territory be equitably divided, as hereinafter set forth; provided, that in any State in which there has been one college established in pursuance of the act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue, for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equitable division of the fund to be received under this Act, between one college for white students, and one institution for colored students, established as aforesaid, which shall be divided into two parts, and paid accordingly; and thereupon such institution for colored students shall be entitled to the benefits of this Act, and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two; and the fulfillment of the foregoing provisions shall be taken as a compliance with the provisions in reference to separate colleges for white and colored students.

SEC. 2. That the sums hereby appropriated to the States and Territories for the further endowment and support of colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury, upon the warrant of the Secretary of the Interior, out of the treasury of the United States, to the State or Territorial treasurer, or to such officer as shall be designated by the laws of such State or Territory to receive the same, who shall, upon the order of the trustees of the college, or the institution for colored students, immediately pay over said sums to the treasurers of the respective colleges, or other institutions entitled to receive the same, and such treasurers shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior, on or before the first day of September of each year, a detailed statement of the amount so received, and of its disbursement. The grants of money authorized by this act are made subject to the legislative assent of the several States and Territories to the purpose of said grants; provided, that payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legislature meeting next after the passage of this act, shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 3. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more complete endowment, support and maintenance of colleges, or of institutions for colored students, as provided in this act, shall, by any action or contingency, be diminished or lost, or be misplaced, it shall be replaced by the State or Territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings. An annual report by the president of each of said colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and

VETERINARY LABORATORY.

expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any experiment stations attached to such colleges, with their cost and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail, free, to all other colleges further endowed under this act.

SEC. 4. That on or before the first day of July in each year after the passage of this act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or for institutions for colored students, under this act, and the amount which thereupon each is entitled, respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation, the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid, it shall be covered into the treasury; and the Secretary of the Interior is hereby charged with the proper administration of this law.

SEC. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

SEC. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this act.

Approved August 30, 1890.

OFFENSES RELATING TO PUBLIC BUILDINGS.

Chapter 5 (S. B. No. 41). An act to amend article 417, chapter 4, title 13, of the Penal Code of the State of Texas.

Whereas, for the purpose of preserving the new State capitol it becomes necessary to better define the offenses set out in the aforesaid act; therefore,

SECTION 1. *Be it enacted by the Legislature of the State of Texas*, That article 417, chapter 4, title 13, of the Penal Code of the State of Texas, which took effect July 24th, A. D. 1879, be amended so as to read as follows:

SEC. 2. Article 417. If any person shall wilfully injure or deface any public building or the furniture therein in this State, he shall be fined not less than five nor more than five hundred dollars. The word deface in this act shall be held to apply to writing, carving, or scratching on the walls or plastering or furniture of said building, or staining the same with paint or any article which will produce a discoloration of the same.

SEC. 3. Whereas, the preservation of the State capitol building, together with other public buildings, creates an imperative public necessity, and an emergency exists requiring the constitutional rule requiring bills to be read on three several days in each house to be suspended, and it is so suspended, and that this act take effect and be in force from and after its passage, and it is so enacted.

[NOTE.—The foregoing act originated in the Senate, and passed the same by a vote of 27 yeas, no nays; and passed the House by a vote of 76 yeas, 5 nays.]

Approved May 14, 1888.

TEXAS AGRICULTURAL EXPERIMENT STATION.

OFFICERS AND STAFF.

GOVERNING BOARD.

BOARD OF DIRECTORS A. & M. COLLEGE.

MAJ. A. J. ROSE, President.....Salado
HON. JOHN E. HOLLINGSWORTH, State Com. Agr.....Austin
HON. W. R. CAVITT.....Bryan
DR. J. D. FIELDS.....Manor
HON. JOHN ADRIANCE.....Columbia

TREASURER.

PRESIDENT L. S. ROSS.....College Station

STATION STAFF.

J. H. CONNELL, M. Sc.....Director
H. H. HARRINGTON, M. Sc.....Chemist
M. FRANCIS, D. V. M.....Veterinarian
R. H. PRICE, B. S.....Horticulturist
D. ADRIANCE, M. S.....Meteorologist, Assoc. Chemist
JAS. CLAYTON.....Agriculturist
J. W. CARSON, B. S.....Assistant to Director
J. M. CARSON, B. S.....Assistant in Agriculture
P. S. TILSON, M. S.....Assistant in Chemistry
W. H. BRODERICK.....Stenographer

SUPERINTENDENTS OF SUB-STATIONS.

J. H. FERGUSON.....McKinney, Texas
J. W. PHILLIPS.....Wichita Falls, Texas

ORGANIZATION.

In accordance with the act of Congress, the Board of Directors of the Agricultural and Mechanical College of Texas, at a meeting held January 25, 1888, established the Experiment Station as a department of the College. Provision was made for assigning to the Station department such part of the College farm, buildings and other equipment of the College

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as would be found necessary to prosecute the work, in addition to the outfit supplied from the funds of the Station.

The director of the Station will have general supervision of all experimental work, correspondence, and publication of bulletins and reports.

The professors of Agriculture, Chemistry, Horticulture, and Veterinary Science will have charge of Station work in their several departments.

LOCATION AND SUPPORT.

The Main Station, located in 1888 on the grounds of the Agricultural and Mechanical College, is supported entirely by appropriations from the Federal government.

Two sub-stations have been established in 1893 for the benefit of entirely different soil sections found in the "Black Waxy" and in the "Panhandle." The "Black Land" station is located near McKinney, in Collin county, and the Panhandle sub-station is near Wichita Falls, Wichita county. Another sub-station will soon be established for the benefit of the horticultural interests of the State. These are supported by State appropriations for this particular purpose.

OBJECTS.

The objects of the Experiment Station and of the sub-stations are clearly set forth in section two (2) of the Act of Congress to which they owe their establishment, a copy of which law is found on page 85 of this Catalogue.

The Board of Control of the Station desire to make this work of as much value to the agricultural and horticultural interests of the State as may be possible. The work will be conducted at all times with special reference to giving information that may be of some practical use to the farmer. To enable them to carry out this policy, all associations having the advancement of agriculture in view—the Grange, Alliance, associations of stock breeders, or fruit growers, or other organizations—will be invited from time to time to appoint delegates to meet with the board of directors and officers of the Station, and consult and advise with them in regard to the work of the Station. Suggestions will be gladly received at all times from any one who is interested in advancing the agricultural interests of the State.

ADVANTAGE TO COLLEGE.

Financially, the station will not be of direct benefit to the College. To compensate the College, however, for the use of property assigned to the work of the Station, such work will add largely to the ability of the

College to impart more thorough instruction in scientific and practical agriculture, horticulture, etc. College students will be employed in the work of the Station to as great an extent as may be found practicable, and the plant of the Station, and experimental work in progress, will increase the means of illustration of the College and be of special advantage to the students in providing practice and training in Agricultural and Horticultural work under skilled instructors. The Station will not add to the expense of the College in any way, as such time as may be given by professors or other employes in experimental work will be paid for from the Station fund, and the value of the time lost to the College deducted from the salary that would be paid by the College if the entire time was given to College work; and in order not to impair the efficiency of instruction the board has provided for additional instructors to relieve the professors of a portion of their class work.

WORK UNDER WAY.

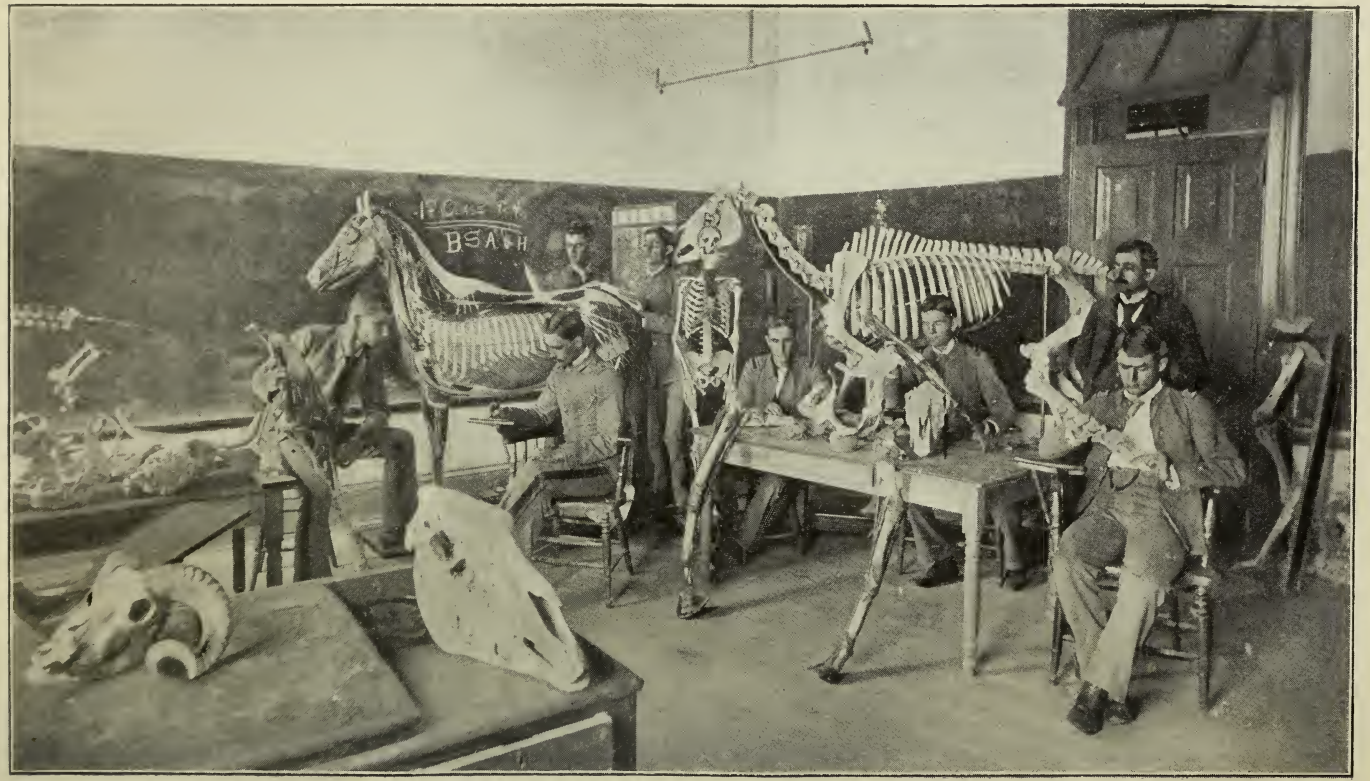
A large part of the farm of 2416 acres is devoted to experimental purposes. Several hundred plats are permanently set apart for field experiments, in a test of the merits of 30 varieties of cotton, 62 varieties of corn, 300 varieties of wheat, a complete test of manures and fertilizers on corn and cotton, 14 varieties of tobacco; a large number of grasses, oats and barley. Experiments to test the feeding value of certain foods for the production of pork, and for milk and butter, have recently been conducted and are not yet published.

Numerous scientific investigations have been conducted and some are now under way, including chemical analyses of soils; stock foods; cotton seed products; animal diseases and paraites; injurious insects and fungi. The Horticultural Department has under trial on the Station grounds more than 300 varieties of vegetables and 700 varieties of large and small fruits.

The two sub-stations are making tests of a large number of varieties of cotton, corn, wheat and grasses, and a full assortment of fertilizers and manures upon cotton, corn, wheat, and oats. The results from these trials will be of particular interest to the people living in "North Texas" and the "Panhandle."

STATION PUBLICATIONS.

Reports of the results of experiments are published once each quarter, or oftener, for free distribution to the people of the State who may be interested in farming. The following reports have been issued on the work up to date (March 1, 1894): Bulletin No. 1, Plan of Organization; No. 2, Cattle Feeding; No. 3, Grasses and Forage Plants; No. 4,



VETERINARY LECTURE ROOM

Cotton Blight; No. 5, Creameries for Texas; No. 6, Cattle Feeding; No. 7, Cotton Blight; No. 8, Diseases of Grapes; No. 9, Pear Stocks; No. 10, Cattle Feeding; No. 11, Effect of Cotton Seed and Cotton Seed Meal on Butter Product; No. 12, The Screw Worm; No. 13, Sorghum; No. 14, Effect of Cotton Seed and Cotton Seed Meal on the Dairy Ration; No. 15, Influence of Climate on Composition of Corn; No. 16, Drainage Experiments with Cabbage, Irish Potatoes, and Strawberries; No. 17, General Information; No. 18, Liver Flukes; No. 19, Corn Fodder; No. 20, Grasses and Forage Plants; No. 21, Effect of Cotton Seed and Cotton Seed Meal in Feeding Hogs; No. 22, Alfalfa Root Rot; No. 23, Black Rot of the Grape; No. 24, The Cattle Tick; No. 25, Texas Soils; No. 26, Cost of Cotton Production; No. 27, Steer Feeding; No. 28, Sweet Potatoes; and No. 29, Effect of Cotton Seed Ration on Butter, Beef, Tallow, Lard and Sheep Suet. Annual Reports for 1888, '89, '90, '91, '92, '93.

We have many of these publications on hand for distribution. They may be had by postal card application to the Director.

An act to establish Agricultural Experiment Stations in connection with the colleges established in the several States under the provisions of an act approved July 2, 1862, and of the acts supplementary thereto.

Section 1. *Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled*, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of the college or colleges, or agricultural departments of colleges, in each State or Territory, established, or which may be hereafter established, in accordance with the provisions of an act approved July 2, 1862, entitled "An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "Agricultural Experiment Station;" provided, that in any State or Territory in which two such colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such colleges, unless the Legislature of said State or Territory shall otherwise direct.

Sec. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and

cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate from time to time, such lines of inquiry as to him shall seem most important, and in general to furnish such advice and assistance as will best promote the purposes of this act. It shall be the duty of each of said stations, annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of the said stations, to the said Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. The bulletins or reports of progress shall be published at said stations at least once in three months; one copy of each shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge of postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of $15,000 is hereby appropriated to each State, to be specially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of section 2 of this act, out of any money in the treasury proceeding from the sale of public lands, to be paid in equal quarterly payments on the first day of January, April, July, and October of each year, to the treasurer or other officer duly appointed by the governing boards of said colleges to receive the same, the first payment to be made on the first day of October, 1887; provided, however, that out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five (5) per centum of such annual appropriations may be so expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury, from the annual statement of receipts and expenditures of any of said stations, that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the next succeeding annual appropriation to such station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this act shall be so construed to impair or modify the legal relation existing between any of the said colleges and the governments of the States and Territories in which they are respectively located.

SEC. 8. That in States having colleges entitled under this section to the benefits of this act, and having also Agricultural Experiment Stations established by law separate from said colleges, such States shall be authorized to apply such benefits to experiments at stations so established by said States; and in case any

State shall have established, under the provisions of said act of July 2, aforesaid, an agricultural department or experimental station in connection with any university, college or institution not distinctively an agricultural college or school, and such State shall have established, or shall hereafter establish, a separate agricultural school which shall have connected therewith an experimental farm or station, the Legislature of such State may apply, in whole or in part, the appropriation by this act made to such separate agricultural college or school, and no Legislature shall by contract, express or implied, disable itself from so doing.

SEC. 9. That the grants of moneys authorized by this act are made subject to the legislative assent of the several States and Territories to the purpose of said grants; provided, that payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 10. Nothing in this act shall be held or construed as binding the United States to continue any payments from the treasury to any or all of the States or institutions mentioned in this act, but Congress may, at any time, amend, suspend or repeal any or all of the provisions of this act.